[redacted]

Cour d'Appel

Montréal

En app[redacted] par
l'hono[redacted]re,
distri[redacted]

Nos: [redacted]

LE PROCUREUR GÉNÉRAL DU CANADA
APPELANT-Intimé

c.

RJR-MacDONALD INC.
INTIMÉE-Requérante

-et-

[redacted]

LE PROCUREUR GÉNÉRAL DU CANADA
APPELANT-Intimé

c.

IMPERIAL TOBACCO LTD
INTIMÉE-Requérante

-et-

LE PROCUREUR GÉNÉRAL DU QUÉBEC
MIS EN CAUSE-Mis en cause

D O S S I E R C O N J O I N T
Volume XXXIII: pages 6260 à 6435
(Dépositions)

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[redacted]

Cour d'Appel

Montréal

En appel de deux jugements rendus le 26 juillet 1991, par l'honorable J[redacted] Cour supérieure, district [redacted]

Nos: [redacted] C.s.M.

LE PROCUREUR GÉNÉRAL DU CANADA
APPELANT-Intimé

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RJR-MacDONALD INC.
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TABLE DES MATIÈRES

		Vol.	Page
Le 27 février 1990			
REPRÉSENTATIONS Vol. 38 - pp. 5799-5800	--	XXXIII	6260
PREUVE DE L'INTIMÉ À L'ENQUÊTE (SUITE)			
NEVILLE LEFCOE	Représentations	XXXIII	6266
Vol. 38 - pp. 5806 à 5851	En chef par Me Baker	XXXIII	6271
Vol. 38 - pp. 5851 à 5970	Contre-int.par Me Cherniak	XXXIII	6316

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CANADA
PROVINCE DE QUÉBEC
DISTRICT DE MONTRÉAL

COUR SUPÉRIEURE

[redacted]ENCE DE L'HONORABLE JUG[redacted]BOT, J.C.S.

RJR-MACDONALD INC.
Requérante

c.

LE PROCUREUR GÉNÉRAL DU CANADA
Intimé

IMPERIAL TOBACCO LIMITÉE
Requérante

c.

LE PROCUREUR GÉNÉRAL DU CANADA
Intimé

27 février 1990 - Vol. 38

COMPARUTIONS :

Pour la requérante
RJR-MACDONALD INC.

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Me GEORGES R. THIBAUDEAU,
EARL A. CHERNIAK, Q.C.,
Me MICHEL A. PINSONNAULT,
Avocats

MACKENZIE GERVAIS
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I N D E X

	PAGES
Representations	5799
Proof of Respondent (Contd)	
NEVILLE LEFCOE	
Examination.....	5806
Cross-Examination.....	5851

http://legacy.library.ucsf.edu/tid/wxq07a00/pdf
Source: http://www.industrydocuments.ucsf.edu/docs/jnhl0001

LIST OF EXHIBITS

		PAGES
AG-158	Curriculum vitae of Dr. Neville M. Lefcoe	5850
AG-159	Report of Dr. Neville M. Lefcoe, "Smoking and Lung Disease"	5850
RJR-132	Chronic Respiratory Disease in Four Occupational Groups	5933

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LIST OF OBJECTIONS

		Pages
1.	Objection.....	5830
2.	Objection.....	5835
3.	Objection.....	5837
4.	Objection.....	5845
5.	Objection.....	5847
6.	Objection.....	5950

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In the year of Our Lord nineteen hundred and ninety (1990), on this twenty-seventh (27th) day of February, PERSONALLY CAME AND APPEARED:

Me ERIC DUNBERRY:

Votre Seigneurie, avant tout j'aimerais mentionner... mon nom est maître Eric Dunberry du cabinet Ogilvy, Renault. Maître Potter s'excuse auprès de la Cour de ne pouvoir être ici aujourd'hui; il m'a demandé de le remplacer.

THE COURT:

Très bien.

Me EARL A. CHERNIAK, Q.C.:

For RJR-Macdonald, Maître Earl Cherniak and Michel Pinsonneault.

Me ROGER E. BAKER, Q.C.:

We're getting fewer in number it would seem. For the Attorney General of Canada, Roger Baker and Claude Joyal.

THE COURT:

Is that a good sign?

Me JOYAL:

With the permission of my friend, this is the c.v. of Dr. Ostiguy. I don't think you -- it was produced before, so because Dr. Ostiguy will testify tomorrow

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morning, if you want to look. J'en ai donné une copie maître Pinsonneault ce matin. Et j'aimerais souligner ceci, Votre Seigneurie:

J'ai rencontré maître Pinsonneault ce matin; il y a le professeur Castonguay qui a produit... pour lequel on a produit un rapport. Le professeur Castonguay, à l'automne, a mené d'autres recherches sur les cigarettes canadiennes. Il m'a informé qu'il avait un complément de rapport d'environ six (6) pages. Je devrais recevoir ce complément de rapport d'ici à jeudi. J'ai dit à maître Pinsonneault que je lui remettrais dès réception; et je n'ai pas l'intention de faire entendre le professeur Castonguay avant deux (2) semaines.

1/0094 Alors si maître Pinsonneault a des remarques ou des objections, on aura, je pense, l'opportunité d'en discuter avant vous, mais je tenais à vous en informer avant.

THE COURT:

Let's go.

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In the year of Our Lord nineteen hundred and ninety (1990), on this twenty-seventh (27th) day of the month of February, PERSONALLY CAME AND APPEARED: --

NEVILLE LEFCOE, sixty-four (64) years of age, residing at [DELETED]

WHO, having been duly sworn on the Holy Bible, doth depose and say as follows:

Me CHERNIAK:

My Lord, just before my friend qualifies the witness, I've got two (2) comments. One is that I don't contest this witness' qualifications to give the evidence that he proposes to give in his report, with only one exception. Now, I understand and, of course, respect and abide by the ruling that you made yesterday with respect to parts of reports, but there is one part of Dr. Lefcoe's report that is so misplaced and so, in my respectful submission, improper, that I hope Your Lordship will find that it's the exception that proves the rule, and that is the part on page fifteen (15) and sixteen (16) that has the heading "Case History", where Dr. Lefcoe, although in all the other parts of his

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report, he refers to studies and research and the like that either he has done or that he has referred to, he purports to make a part of his report, a separate section of his report, the case history of a member of his family who allegedly apparently died from cancer.

My Lord, in my submission, such a paragraph or section has no place whatever in an expert report. For instance, just to take the other side of the coin, it would be, I suggest, quite improper for me, and I would be properly stopped, if I purported to, as part of my cross-examination of Dr. Lefcoe, find out how many members of his family, his ancestors, had smoked and lived to a ripe old age. I mean, if we just -- Your Lordship would say how can that help me? It's just not -- it's just not relevant.

He's here to give expert evidence on matters and so I would not and I would submit I could not cross-examine on such irrelevant matters; and similarly, in the report of an expert, it simply cannot help you and it's not probative and it's, in my submission, not properly the subject matter of expert evidence to refer to a case history of a member of one's family to illustrate points that are made on the basis of expertise. It's my submission to you.

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THE COURT:

Maître Baker?

Me BAKER:

My Lord, I would submit to you that my friend's comments in respect of a part of the report which he finds offensive and irrelevant are, to begin, premature. Those paragraphs on page fifteen (15) and sixteen (16) which deal with a case history, one could properly call anecdotal. Anecdotal evidence of this nature receives whatever weight and probative value a judge determines it ought have.

The form in which that evidence is placed in the report should not be in and of itself a bar to its inclusion in the report, such that it should simply be torn out. We may or may not get to that evidence with Dr. Lefcoe in his viva voce evidence, I don't know. I would submit to you, however, that that would be the appropriate time, if there should be an appropriate time for such an objection, for it to be made. Certainly not now.

THE COURT:

But ...

Me CHERNIAK:

May I just say this, My Lord? I've understood, I may be wrong, that the report is in evidence.

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THE COURT:

2/0051 Not yet.

Me BAKER:

Not yet.

THE COURT:

It's not filed, but it ...

Me CHERNIAK:

I presume that my friend tenders it. If he's not tendering it ...

THE COURT:

Eventually it will be filed.

Me CHERNIAK:

... that would be different. Of course, if my friend doesn't intend to tender the report, that's different. Then the only evidence is the evidence that the doctor will give in the witness stand and that's fine. If that's the situation, then we'll deal with it when he proposes to -- if he proposes to deal with -- with that part of the report, but if he proposes to file the report, then I think we have to deal with it now.

Me BAKER:

May I begin?

THE COURT:

Well, what do you have to say to that?

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Me BAKER:

Well, there's no question ...

THE COURT:

Obviously, you intend to file the report.

Me BAKER:

Of course, I do, but as I understand it from yesterday, Your Lordship has already rendered a decision in respect of what should or shouldn't be included in a report and the appropriate time to make such an objection, and what you can really take out of a report. You can choose to ignore the report, you can choose to give it no weight, or parts of it, but it's certainly inappropriate at this time, before Dr. Lefcoe is qualified, to simply suggest that anecdotal evidence that he happens not to like, that he determines is irrelevant, be omitted. He can't just take a scissors, My Lord, I'd submit to you.

THE COURT:

It's certainly premature at this stage but, I mean, we'll have to deal with it later, so we'll deal with it later.

Me BAKER:

Thank you.

THE COURT:

Let's start and then we'll deal with it later.

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Me BAKER:

Now, to clarify, before I begin to put questions to the witness on his qualifications.

EXAMINATION BY Me ROGER E. BAKER, Q.C.,

On behalf of Respondent:

Q- Dr. Lefcoe, I see on the front page, the first inside page on the report itself, in the bottom left corner, it's marked: "Victoria Hospital, Montreal, Quebec". Do I take it that that's an error ...

A- Yes.

Q- ... and that Victoria Hospital is in London, Ontario?

A- Indeed.

Q- We're not talking about the Royal Victoria Hospital of Montreal. Dr. Lefcoe, you have in front of you your curriculum vitae, do you not?

A- Indeed.

Q- Could you please tell the Court where you studied medicine?

A- I had my pre-medical studies at McGill University, I'm a Bachelor of Science; medical degree, Vanderbilt University in the United States, and post-graduate training internship at Vanderbilt, four (4) years of post-graduate training at Harvard University and ...

Q- What did you study at Harvard?

A- General internal medicine and pulmonary disease at the

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Peter Bent Brigham Hospital and the Harvard School of Public Health.

Q- M'hm.

A- And then terminated my training with two (2) further years at the University of Western Ontario, Victoria Hospital.

Q- Have you had a teaching career, doctor?

A- Yes.

Q- Where?

A- At the University of Western Ontario faculty of Medicine, largely at Victoria Hospital, one of the major teaching hospitals.

Q- And what did you teach?

A- Largely pulmonary disease, all of this time.

Q- Were you the head of the department of Pulmonary Medicine at the university?

A- For twenty-five (25) years.

Q- Are you still?

A- No, I relinquished that post.

Q- How old are you, doctor?

A- Sixty-four (64).

Q- Do you have a medical practice currently?

A- Yes, I do.

Q- What does it consist of -- would you tell the Court?

A- A referral practice in pulmonary disease.

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Q- What does that mean?

A- Physicians in our area -- it turns out to be the city of London and a good part of Western Ontario -- send patients in to the university Referral Center and send thus many patients in with pulmonary diseases of various kinds -- pulmonary diseases broadly, broadly understood -- to my office for a consultation. These patients are dealt with by me: history, physical, appropriate laboratory tests. On occasion, rarer and rarer occasions these days, admitted to hospital. Sometimes they're sent directly back to their physician, sometimes I see them once, twice, occasionally three (3) more times before sending them back to their doctor.

Q- What are the pulmonary diseases that you deal with as part of your practice, Doctor?

A- A spectrum of diseases. Perhaps the most -- most common ones are chronic bronchitis, chronic obstructive lung disease, chronic pulmonary disease. These are synonyms. Lung cancer, bronchial asthma and many other uncommon ones: tuberculosis, fungus disease, the results of chest wall injury, pleural disease, cysts.

Q- Do you hold any -- currently hold any positions with the Ontario Medical Association?

A- I'm a member of the Committee on Public Health of the Ontario Medical Association.

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Q- And what does that entail? What do your duties entail?

A- I am the resource person on the committee re smoking and health.

Q- That is a pretty broad term, smoking and health, doctor. Could you be more specific, please?

A- The Committee on Public Health considers issues which it recommends to Council of the Ontario Medical Association and annually, at least annually, the association makes public announcements regarding matters of public health which are of current concern to the medical practitioners of Ontario, the Ontario Medical Association, and we make, we debate at great length within our committee. We go home and consult with our colleagues in the area in which we are concerned and write up reports, and I write reports relevant to issues of current concern regarding smoking and health.

Q- Doctor, I'm looking at Tab 1. C'est dans le livre, avec le curriculum vitae, Votre Seigneurie.

THE COURT:

Incidemment les publications que vous incluez là-dedans ne font pas partie de la preuve; ce ne sont pas son rapport; c'est uniquement une liste de publications.

Me BAKER:

Oui, c'est ça, Votre Seigneurie.

Q- In Tab 1, I see a list of publications. Several of

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these deal with smoking prevention and cessation in children and adults. Doctor, you're a specialist in lung diseases. Could you tell the Court when and why you got interested in the issues of prevention and cessation?

A- Well, certainly, Your Lordship, back in the late fifties (50s), early sixties (60s), it was becoming apparent that the proof was in that smoking was a major cause of lung disease, lung diseases of various kinds. Part of my duties, in addition to teaching and consulting the patients, as an academic, of course, is to produce some research. By research, I mean production of new knowledge.

We have research funds available. We apply for research funds and I decided at that time that our unit should become interested in the smoking problem and we decided our efforts should be in smoking prevention and smoking cessation in those already smoking. And I became associated at that point with Linda Peterson, who was a psychologist and latterly became an epidemiologist that has been in the department of Epidemiology and Biostatistics at the University of Western Ontario and others.

Q- So then you have been researching with Dr. Peterson. I gather she has a Ph.D. in epidemiology?

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A- Yes.

Q- For a period of approximately fifteen (15) years, dealing with issues of prevention and cessation of smoking, is that correct?

A- Yes, sir.

Q- All right. As you know, doctor, in several places in your report, you have used the word "addiction." Could you tell the Court what part of your work allows you to opine as to whether cigarettes are an addiction? What is it that you do and what is it that you've done that you believe qualifies you to make the statements that you make in that respect in your report?

A- Well, I suppose in the very first instance I see people who smoke, who have smoking-related diseases. And their behaviour with regard to smoking and smoking cessation, how they handle the advice which I give them regarding smoking, fits very nicely with what I know about the problem of addiction. So, within my practice, I am familiar with people who exhibit things which lead me to suspect they are addicted.

Additionally, although my field of expertise is pulmonary diseases, one of course has to have some knowledge of many other areas, a fairly intimate knowledge in some cases. And since I deal with people of this nature, since we do research in the area of

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prevention and cessation, one must have some familiarity with at least the clinical literature on addiction, and to that end I must make some conclusions in my own mind.

I would say, parenthetically, that these same conclusions are reached by my colleagues in pulmonary disease; they use the term. I use the term in my discussions with them, they use the term in their discussions with me.

Q- Thank you, Dr. Lefcoe.

My Lord, I have no further questions of Dr. Lefcoe in respect of his qualifications.

Me CHERNIAK:

I have no questions.

THE COURT:

No questions?

Me BAKER:

My Lord, I offer to you Dr. Neville Lefcoe as an expert in those matters dealt with in his report.

THE COURT:

In his field -- in his field of expertise, yes.

Me BAKER:

Q- Doctor, on a daily basis, exactly what diseases do you treat as a practicing physician?

A- Chronic bronchitis, chronic obstructive pulmonary disease, often referred to in many places: "C.O.P.D.,"

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synonym: "C.O.L.D.," chronic obstructive lung disease, lung cancer, primary lung cancers, bronchial asthma, tuberculosis, lung abscess, pneumonia, acute bronchitis; the list is long.

Q- Doctor, you've been practicing as a physician for some thirty-five (35) years or forty (40) years?

A- Thirty (30).

Q- Thirty (30)?

A- Thirty (30).

Q- Say it out loud, so that the Court can hear you, please.

A- Thirty (30).

Q- From your experience as a practicing physician and the work you have done at the university, have you formed an opinion as to whether smoking cigarettes over many years causes certain diseases?

A- Yes, indeed.

Q- Would you list the diseases that you believe are caused by the consumption of cigarettes?

A- Chronic bronchitis, chronic obstructive pulmonary disease, lung cancer.

Q- When you talk about cause, doctor, what do you mean by the use of the word? What is the evidence on which you rely?

Me CHERNIAK:

Those are two (2) separate questions, My Lord.

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Me BAKER:

I beg your pardon?

THE COURT:

Pardon?

Me CHERNIAK:

I said, I think that's two (2) separate questions.

THE COURT:

Well, we'll see.

A- The term "cause", as I use it, as my colleagues use it, in this context is based on the evidence which we read in the literature, largely epidemiologic evidence, where, and this is a major principle in biology, if there is a stimulus which produces a certain disease frequently or -- be that air pollution, food, water pollution, poison, stress, whatever, in this instance we say "smoking," and one sees, among people who smoke, a higher prevalence than normal of this disease or an exclusive prevalence of this disease, this is one form. And then when the stimulus stops again there's biological principle, then the severity, the incidence of this disease drops or does not continue to rise, certainly changes very significantly, this is additional evidence, additional evidence of proof that one is looking for in biology.

As you know, My Lord, the problem we have is we

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cannot experiment and, of course, with human beings we cannot start an experiment from page one (1) by administering toxins or chemicals of all kinds. This is true for every area in biology. And if we were to try to get that kind of proof, absolute proof, we would actually be unable to practice medicine, I think. It would be very difficult.

And we have accepted the sort of overwhelming evidence that smoking causes lung cancer, chronic bronchitis, chronic deficiencies -- in the literature is proof. Additionally, in my practice everyday -- everyday -- I see people who confirm this evidence. I see people who have chronic obstructive lung disease, have lung cancer, and these are smokers.

Q- Now, doctor...

A- An overwhelming majority are smokers.

Q- You spoke a moment ago about your own practice. What is your evidence that smoking causes chronic bronchitis? Your own evidence.

A- Chronic bronchitis: coughing, sputum production, by definition, occurs in smokers. Almost exclusively, not completely exclusively, other stimuli which are listed in the literature as producing chronic bronchitis and which I see occasionally, are people who are exposed, perhaps in the course of their occupation to inhalation

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of a lot of dust, a lot of irritating gases, particularly dust, but irritating gas as well. They too will have their lungs irritated and start to cough and spit and produce phlegm, cough up phlegm.

Q- Doctor, in your own practice, do you make any observation in respect of what proportion of patients you've seen with chronic bronchitis smoke or do not smoke?

A- Right. Practically none. I see practically no people with chronic bronchitis. I don't remember one in the last year who did not smoke.

Now, London may not be representative. You know, every survey you do is perhaps subject to who the population is that you're serving. We serve the people in London and we know the people. We see a fairly decent cross-section in our office. There are no mines in London. Nobody mines silica or asbestos which do irritate the bronchial tubes.

Q- Doctor, in the last ten (10) years, how many patients have you had with chronic bronchitis that didn't smoke?

Me CHERNIAK:

Well, My Lord, if we're going to get a guess that's one thing, if we're going to get a survey of his patients, I've not seen it in his report and I don't think the witness should be allowed to simply guess at something.

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And if this is a part of the research that resulted in his report, you know, that's one thing, but I haven't seen it in his report. Maybe I've missed it and my friend can point it out to me, but I don't think the Doctor should be allowed to speculate or guess. That kind of thing should be in his report or it shouldn't be given.

THE COURT:

It should have been in the report for -- for one thing. Under reserve anyways.

Me BAKER:

Q- In the last ten (10) years.

A- May I answer the question?

Q- Yes.

A- I can remember but one. I thought about this issue and raised it and I can remember but one.

Q- What are the symptoms of chronic bronchitis, doctor?

A- Chronic cough. Now, chronic means long-term cough, with production of sputum. The exact definition, of course, is sputum production on most days of the week for at least three (3) months out of the year, for at least the last two (2) years. We teach that to our students as four (4), three (3), two (2). Four (4): most days of the week; three (3): three (3) months of the year; last two (2) years.

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Q- Once you have a person who has chronic bronchitis, doctor, does it basically stay the same or does it change?

A- If they continue to smoke, it tends to get a little worse over the years. If they stop smoking it tends to regress and frequently the sputum disappears, so they no longer have chronic bronchitis.

Q- How is this disease treated?

A- Smoking cessation.

Q- Is that the only treatment?

A- Yes, sir.

Q- Doctor, do people die from chronic bronchitis?

A- Not from chronic bronchitis, but they may die from the ongoing progression of the disease, as you might appreciate. In some cases of chronic bronchitis, not all, but a good number of them, the disease progresses on to where this continual irritation of the bronchial tubes now starts to produce obstruction in the tubes, a narrowing of the tubes, so then we have chronic obstructive pulmonary disease. In that case they die. Some die.

Q- Now, just so we get the terminology straight. You've just referred to chronic obstructive pulmonary disease. Is that the same as chronic obstructive lung disease?

A- Yes, I'm sorry, these are synonyms.

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Q- Otherwise known as "C.O.L.D." C-O-L-D?

A- I apologize.

Q- You don't need to apologize.--

A- On behalf of my profession for the plethora of terms.

Q- Now, could you tell the Court exactly what is chronic obstructive lung disease?

A- Chronic obstructive lung disease, clinically described, is patients who cough, spit, wheeze, noisy, noisy wheezy respir -- musical respirations from time to time or continually, and become short of breath.

Q- Is chronic obstructive lung disease the same as emphysema, doctor?

A- Again, a matter of terminology. Emphysema is one of the things that's listed under chronic obstructive lung disease. Emphysema, however, is not a clinical diagnosis, it's a pathological diagnosis. This is what the pathologist sees under the microscope, a hole in the lung or holes in the lung.

Q- Doctor, please tell the Court, what is your own evidence that smoking causes chronic obstructive lung disease?

A- You mean from my practice?

Q- From your practice.

A- Yes. Well, in spite of the fact that the literature says and we've reviewed many and there are many long large studies, epidemiologic studies of chronic

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bronchitis, chronic obstructive lung disease, chronic obstructive lung disease. In my practice -- and the studies tend to show somewhere around ninety percent (90%) of people with chronic obstructive disease are smokers -- my practice is a little different somehow than the literature, that I rarely, rarely see a case of chronic obstructive lung disease who's not a smoker. Again, I certainly can't explain that without any shadow of doubt. I can only speculate as to why that is.

Q- Doctor, in the symptoms of chronic obstructive lung disease, you mention shortness of breath. What exactly do you mean by that in medical terms?

A- The patient will -- and at this point often they are sent to the consultant's office, of course -- they are walking on the street downtown, they are playing golf or they're more active, they may be playing tennis, or they may climb a flight of stairs and suddenly feel that they can't get their breath easily; they have to stop, and their chest feels tight, they've been wheezing a lot. And they have to stop and rest and "get their breath," before they can go on. Sometimes they feel dizzy if they try to persist and go on. This signifies to us that they are not getting enough oxygen in; one of the manifestations of not getting enough oxygen, of course, is shortness of breath.

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Q- Are there any other manifestations of lack of oxygen in the blood?

A- Indeed. There have been some excellent studies, careful studies in volunteers on the effects of hypoxemia, low oxygen in the blood. Low oxygen concentration in the arterial blood.

The very first thing is cognitive function of the brain decreases, so they don't think as well. A little memory loss, they're not able to function as well on their job, perhaps in a social situation. And at first these are subtle changes in terms of chronic hypoxemia, which these patients will develop, even at rest.

Q- Doctor, I refer you to page ten (10) of your report. And I'm looking at the chart on page ten (10) by Fletcher.

A- Okay.

Q- So could you begin by telling the Court who Fletcher is?

A- Charles Fletcher is a very senior, an older British chest physician, who did some very original work on chronic obstructive lung disease and is recognized world-wide for his contributions. He very carefully and systematically followed his large practice in England with visits, six (6) monthly, some cases yearly, some cases three (3) monthly, but certainly six (6) monthly. He examined them, he talked to them, he found out what

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they were doing, their occupation, their exposures to various pollution. He did their test, their F.E.V. I test and he recorded these observations, and eventually reported on large groups of these people.

Q- Now, what is the F.E.V. I test? And if you'll look through the -- on the left side of the chart, you see "F.E.V. I (Percentage of Value at Age 25)." Do you see that?

A- Yes, the F.E.V. I is a very simple and extremely valuable test that we use in pulmonary disease. Really what it does is to confirm obstruction to air flow. Narrowing of the airways. A patient takes a deep breath in and blows out as hard and as fast as he can into a machine which records how much air he gets out per minute, per second actually. The "I" refers to one (1) second. How much air, how many liters of air he gets out in the first second.

It turns out this is a very reliable -- and by reliable, I mean it's reproducible. Reproducible. You can do it time and time again. A reliable expression of air flow obstruction. It is also a valid -- valid expression of air flow obstruction. By valid I mean the changes that you see in F.E.V. I relate to what we think they relate to, that is: narrowing of airways. So if you say the F.E.V. I is low, you are justified in

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concluding, and the vast majority have been consistent, that the airways are narrow.

Q- What does this chart actually illustrate?

A- What Dr. Fletcher is attempting to convey here, and this is a very well-known chart, we've used this in our teaching program in third year medicine and fourth year in internship. Dr. Fletcher projected or took his young patients, back at the age of twenty-five (25), before the vast majority of them had any evident obstruction to air flow, a narrowing of their airways and expressed that as one hundred percent (100%) F.E.V. I, one hundred percent (100%) of the predicted F.E.V. I for that particular person.

THE COURT:

What do the letters "F.E.V." stand for?

A- Forced Expiratory Volume, first second. Now, one would appreciate that a six foot eight inch (6'8") male would have a larger predicted F.E.V. I than a five foot two inch (5'2") female, so there are standards drawn up from normal people for particular age, sex and height.

However, he put them back at a hundred percent (100%) at age twenty-five (25).

He then grouped his patients into those who had never smoked, who he had followed over the years for other reasons, and showed that their F.E.V. I did not

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deteriorate. It deteriorated at a certain slow rate as they got older. He also put into that category people who smoked but whose airways did not seem to be affected.

And all those groups showed, perhaps if you get out to age seventy-five (75), go vertically from the seventy-five (75) at the bottom, they -- and then back across horizontally -- they are at about seventy-five percent (75%) of their F.E.V. I at age twenty-five (25). So you lose a quarter of your ability to blow out air rapidly from age twenty-five (25) to seventy-five (75).

Q- So if we look at the line, Dr. Lefcoe, that deals with people who smoke regularly and are susceptible to its effects, you see that at age fifty (50) there is a diminution from a hundred (100%) to seventy-five percent (75%) capacity?

A- Yes.

Q- Now, what does that mean that diminution of seventy-five percent (75%) capacity -- the ability to?

A- The ability to -- it means the airways are narrowed and this is just one line on a whole lot of curves. He's chosen that line and it's amazing how often that turns out to be the line upon which our patients find themselves. But some of them may decline at a more rapid rate, so the line would be to the left of that and

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declining more rapidly.

Q- What is the manifestation ...

Me CHERNIAK:

I'm sorry. I don't think the witness finished that particular answer.

Me BAKER:

Very kind of you, Mr. Cherniak.

Me CHERNIAK:

Well, the witness was clearly going on. I'm quite interested in what he was saying.

A- The line -- but this is the main -- this is the main line which Dr. Fletcher has chosen to display and what the line says that people who are regular smokers who are susceptible to its effects will have their F.E.V. I decline more rapidly over the years. That is to say, their airways narrow more rapidly than people who don't smoke or people who smoke and are not susceptible to its effects.

In this particular case, at about age sixty-five (65), one crosses the line where one begins to show real disability. Now, one can define disability in many different ways. Dr. Fletcher has chosen to define it in terms of evident disability, interference with job performance, interference with social life.

The curve then goes on to show what happens -- and

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our patients are most interested in this, of course -- having once developed this obstruction: "what happens, doctor," they say, "if I quit?"

And that dotted line, starting at age fifty (50), is on average what Dr. Fletcher found. That is, they don't improve very much. So we have said -- and this is borne out in our practices and borne out in other similar studies -- that you don't improve much. This is permanent damage. The airways are permanently narrowed.

Q- Doctor ...

A- But you ...

Q- I'm sorry. Continue.

A- But you don't decline at the same rate that you used to decline when you were smoking. Then the curve of decline, the dotted line here, labelled: "Stopped at 45," seems to parallel the normal rate of decline of the people who never smoked. It's parallel to those upper lines. And the net result is, of course, instead of crossing the disability line, in this particular case at age sixty-five (65), he doesn't hit the disability line until about seventy-seven (77), seventy-eight (78).

Q- How is C.O.L.D. -- or chronic obstructive lung disease -- treated, doctor?

A- Smoking cessation. Having once stopped smoking and hopefully achieved a result similar to the one of that

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dotted line, one can then make a position, can then make concerted efforts to administer drugs to attempt to, (a) in the first instance: dilate the bronchial tubes as much as you can. And our efforts are not terribly successful, but we can produce a small but significant result -- and any dilatation at this stage is most welcome for the patient -- with what we call "bronchodilator drugs."

And there are a lot of them. Some of them have side effects and there's a tremendous area of interest and almost specialization with the pharmacy using bronchodilator drugs with good effects and few side effects; fewer and fewer side effects.

We then may attempt to administer drugs to cut down the inflammation in the bronchial tubes. And for all it is the irritant which they're breathing in, the smoke which they're breathing in which irritates their tubes, they get red, swollen, it would look much like a skin rash, except it's on the inside and it's swelling inwardly and thereby obstructing the tubes. There are drugs which can lessen the inflammatory response a little. Not in many cases.

Q- Doctor, is mortality a consequence of chronic obstructive lung disease?

A- In some cases, yes.

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Q- Approximately how many people die in Canada on an annual basis from C.O.L.D.?

A- The statistics we have from causes of death and so on run around seven thousand (7,000) a year.

Q- And where do you get those statistics from?

A- The Dominion Bureau of Statistics, Cause of Death, Chronic Disease in Canada, published in Ottawa.

And interestingly enough, these are very similar to American figures. They're ten (10) times the population, they run about seventy thousand (70,000) deaths.

Q- As a part of your everyday practice, doctor, you deal with cases of lung cancer, of course, do you not?

A- I do.

Q- Is it your opinion and do you believe that smoking causes lung cancer?

A- Yes.

Q- On what do you base that answer?

A- Similar reasons to those for chronic obstructive lung disease. The epidemiologic evidence has been in now for quite some years showing that smokers develop lung cancer with much greater frequency than non-smokers, that the response is -- parametric is the term I use. It merely means that the greater the stimulus, the greater the response. That is, if you smoke more, more

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cigarettes per day and have smoked for longer, then your risk of developing lung cancer is greater. This is clearly -- has now been clearly demonstrated in many large studies.

Q- And what happens to long-term heavy smokers in respect of lung cancer when they quit?

A- Again, part of our biologic proof, the risk -- their risk drops off fairly rapidly. Over fifteen (15) to twenty (20) years it drops down from, depending on how heavy a smoker they were and how many years they've smoked beforehand, we use the term pack-years: the number of packets of cigarettes per day multiplied by the number of years that they've smoked. So "pack-years" is a common phrase in clinical medicine. Depending on how many pack-years they have when they quit, their risk may be eighteen (18) times normal, twenty-five (25) times normal, thirty (30) times normal. It drops over fifteen (15) or twenty (20) years and it drops in large studies to two (2), three (3), four (4) times the rate of non-smokers. So it drops very considerably, but not quite all the way to the bottom, that is to the rate of non-smokers.

Me CHERNIAK:

My Lord, you know, we are hearing this but there is virtually none of what the doctor has just said in his

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report. We've had the world's leading expert on the subject give evidence and I just don't understand why my friend is -- or how my friend can lead evidence in this way. This was not in his report, so I've had no basis for preparing a cross-examination on this aspect of his evidence -- and when he's had Dr. Doll and Dr. Miller give evidence on the very subject. It's not very helpful.

THE COURT:

It's not even his field of expertise.

Me BAKER:

It's simply in part, My Lord, with respect on what he relies. In part on what he relies.

Q- Doctor, do you regularly read the literature regarding smoking as a cause of lung cancer?

A- Yes.

Q- You're referring to peer review journals?

A- Yes.

Q- When was the last time you read in a peer review journal that smoking was not a cause of lung cancer?

Me CHERNIAK:

My Lord, I mean that is a wholly improper question. Surely you can't ask a witness: "Do you read peer review journals and when was the last time that you read it". I mean, that's -- you know, he's got to give -- he's got

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to have a basis for making whatever his opinion is on that issue, but that's not the way to question a doctor on it and there is nothing about his analysis of peer review journals on this issue in his report.

Me BAKER:

6/0072 My Lord, it's simply a way of short-circuiting or short-cutting a variety of other questions, which I can put if Your Lordship deems it more appropriate. The witness has expressed the view that smoking causes lung cancer. He knows that from his work, from the reading he's done, from the teaching that he does and the work he does at the Medical School at the University of London, Ontario. It's certainly not inappropriate to ask the witness what he has read in respect of this problem.

Me CHERNIAK:

My Lord, the only thing he says about smoking causing lung cancer is at page fourteen (14) of his report, that's one (1) line:

> "Best estimates place the percent of primary lung cancer cases which may be attributed to smoking at about 90%."

Now, that's the only thing he says, as best I can tell, in the entire report, about smoking causing lung cancer. Now, we've had that exact -- that evidence in

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considerable detail by the leading British epidemiologist and one of the leading Canadian epidemiologists and I don't see how it can help you to have this witness say anything further about a matter that he has never written about, that he's never done any research on, just based on what he reads in the literature. We've had the people that write the literature here.

Me BAKER:

My friend, I'm sure, would like to restrict the discussion only to the issue of epidemiology. My Lord, this man practices medicine for a living as a physician and he teaches in the areas in which he practices. One of those areas is lung cancer. If Dr. Lefcoe, given his expertise and what he does on a daily basis and has done -- and has done for almost forty (40) years, is not qualified to give his opinions and why, then I would submit to you virtually nobody is. It may well be that Mr. Cherniak would like the debate, as it were, to rest only on the testimony of Dr. Doll ...

THE COURT:

That's your witness.

Me BAKER:

I beg your pardon?

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THE COURT:

That's your witness.

Me BAKER:

That's right. May I be permitted to ask the question, My Lord?

THE COURT:

I will allow the question under reserve but again, you filed a report. This is the basis upon which the witness is supposed to testify and you should try to stick to what's contained in the report.

Me BAKER:

Q- Dr. Lefcoe, you have said that it is your opinion that smoking causes lung cancer. Have you seen in recent years the contrary opinion expressed in peer review journals?

A- In the peer review journals which I read, I have not seen that opinion expressed.

Q- Is lung cancer difficult to diagnose?

A- Oh, very early it is. Later on, when it becomes symptomatic, not too difficult.

Q- How is it? How is it diagnosed?

A- Lung cancer appears in several different forms, to start with. One of the forms is the patient will have an X-ray for another reason, you have an X-ray for immigration purposes, for employment purposes, working

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in a restaurant. He has a bad cold and the doctor says: "Well, maybe we'd better get an X-ray" -- and on that X-ray, one sees a shadow which looks like it could be lung cancer. That's a fairly common way of lung cancer first being diagnosed or suspected. Certainly, seeing a shadow on an X-ray in a smoker is a different thing from seeing a shadow in a non-smoker. One must immediately take action, if it's in a smoker, because this may well be a cancer.

Secondly, it occurs in a patient who gets pneumonia. Pneumonia is not uncommon, but pneumonia tends to resolve and go away in a matter of a week or two (2) or three (3) or four (4), and people are sent to me with persistent or unresolved pneumonia over a period of weeks, months, the pneumonia doesn't go away -- we suspect lung cancer in a smoker -- or a pneumonia which the patient sustains, treated, goes away and comes back again in exactly the same place two (2) months later, six (6) months later. Recurrent pneumonia in the same place.

Occasionally, it may present as a large or small or medium episode of blood spitting and the patient suddenly coughs up a lot of blood, maybe a life-threatening amount of blood or just maybe smaller amounts. In a smoker, this means investigation for lung

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cancer.

Q- What is a coin lesion?

A- A coin lesion is a small shadow on the X-ray which -- in a two-dimensional X-ray, of course all we have is the two (2) dimensions -- looks like a coin. It's just a little round shadow.

Me CHERNIAK:

My Lord, I really hate to keep jumping up. There's nothing in this man's report about coin lesion. If I had known he was going to give evidence about coin lesion, then I might have tried to prepare a cross-examination of what a coin lesion is and how you diagnoses lung cancer and the like. There's nothing in his report about that. I'm not prepared to cross-examine him on those matters. So it's totally unfair to ask this witness about matters that are nowhere mentioned in his report, that I have no opportunity to prepare a cross-examination upon.

THE COURT:

Where is it mentioned in his report?

Me BAKER:

The word is not used in the report.

Me CHERNIAK:

The whole subject matter isn't. Diagnosis of lung cancer is not mentioned in the report anywhere, My Lord.

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Me BAKER:

My Lord, it's simply a -- it's simply a medical term that isn't used. It's not necessarily the subject of something that Mr. Cherniak may even want to cross-examine on. It is not the most relevant thing that I've asked the witness and I don't find it particularly frightening if Your Lordship is to maintain the objection, but it's not the kind of thing. It's simply a word in the lexicon of words that medical doctors use, particularly pulmonary doctors. I've simply asked him what is a coin lesion.

THE COURT:

Well, as I said, you should try to stick to the report that was sent to your opponent, so the objection is sustained.

Me BAKER:

Q- Doctor, is lung cancer curable?

A- In a small percentage of cases.

Q- What is that percent approximately?

A- Approximately six percent (6%).

Q- What are the treatments for lung cancer?

A- Surgery, which is really the only curative treatment, chemotherapy, radiation -- and combinations of these, of course.

Q- Are different cures or treatments tried for different

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kinds of lung cancer?

A- Yes. The non-small cell -- we -- we divided, for practical purposes, we heard yesterday -- may I refer to that?

Q- No, it's not...

A- No?

Q- ... necessary for you to go into the detail of it, doctor. I just asked simply...

Me CHERNIAK:

Again, My Lord, I mean, I really hate to keep rising but this doctor does not deal anywhere in his report with the treatment of lung cancer. I mean, why are we hearing the doctor on it? He doesn't deal with it. I'm not prepared to cross-examine him on the treatment of lung cancer because he never mentions it.

Me BAKER:

My Lord, indirectly he does, of course, in many ways, particularly that part of the report which Mr. Cherniak does not particularly like. I had no intention of going into the detail of the treatment of lung cancer with the doctor. I simply asked him if different kinds of treatments are used for different kinds of lung cancers. That, I would submit to you, is not an inappropriate question, whether or not that was specifically addressed in the report.

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THE COURT:

Well, I tend to think you're right this time, because I look at page fourteen (14) that you have, in so many words, the death rates or the salvage rate as the doctor used it. So, it is dealt in his report. So you're right this time. The question is allowed. Go on.

Me BAKER:

Q- Do you remember the question, doctor?

THE COURT:

How did you treat surgery, which was the only cure and then -- or chemotherapy, radiotherapy or a combination of all?

Me BAKER:

Q- Are different treatments used for different kinds of lung cancers?

A- Yes. If in -- during the investigation of the lung cancer one finds that it is, if I may use the term "early" -- that is, there is no evidence that it has spread beyond the confines of the lung and looks as though it can be gotten out: stage I and sometimes stage II is the sort of technical terms we use, then surgery is the way to go.

Clearly, if the lesion has spread to other places, to the bone, to the valve of the heart, in the head -- which is a favorite place -- via the blood, spreads via

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the blood stream, and then clearly there's not much point to taking it out of the lung. And in those instances, radiation may be used.

If it is what we call a small cell cancer, which is a very -- vary in form, perhaps some thirty percent (30%) of lung cancers are small cell. It's just a different microscopic variety. They are very fast moving. Chemotherapy is used. And sometimes chemotherapy plus radiation.

Q- So it takes the tumour a very long time to grow once it begins and to become manifested?

A- Yes. Non-small cell, all the other kinds, except small cell, is thought to have about a fifteen (15) year history before it becomes apparent or at least before it kills the patient. Somewhere between those two (2).

Q- Does that -- I'm sorry.

A- It could, when cancer starts, at some point, it usually starts when it eventually becomes clinically manifest, it starts with one cell, which starts to grow wildly. It divides into two (2) cells, four (4) cells, eight (8) cells. It takes an awfully long time for that type of division to show a lump in the lung or to impinge on something which the patient will notice, like a bronchial tube or a blood vessel. So it takes many years for a tumour to become clinically apparent.

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Q- Does that mean that a person who has a cancerous tumour growing on the lung, could walk around apparently being healthy?

A- Oh, of course. Of course.

THE COURT:

If it's a non-small cell?

Me BAKER:

That's all I know.

Q- Which is what makes it so difficult to diagnose, I presume?

A- Of course.

Q- Do most of your patients smoke, doctor?

A- Most of my patients have been smokers or are current smokers. If I were to take a cross-section of the patients I saw last week in my office, or next week, a fair number of them are ex-smokers, particularly the sicker ones. Eventually some of them give up. I'd say forty percent (40%). I don't have absolute statistics. I would say about forty percent (40%) of my patients.

Q- Are still smokers?

A- Are still smoking.

Q- Do you invariably try to get them to quit, doctor...

A- Invariably.

Q- ... when you see them in your office?

A- The only ones I don't are people clearly who have

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advanced lung cancer, which will be obviously incurable. To add on to their already tremendous dismay, depression, sickness with strong admonitions to quit smoking, with all the difficulties that that may entail, perhaps is wrong. And we tend not to do that.

But any other cases who have a chance of amelioration or cure of their disease, absolutely.

Q- Why do you do that, though? You say that you try to get them to quit, but why do you try and get them to quit?

A- Well, I'm a physician and this is what physicians do. They try to help people and this is, in my view, the very first thing to do.

Q- Have you ever run a smoking prevention program out of your office, doctor?

A- Yes, I do all the -- a formal program? No. No. There are such in town, but I don't run one out of my office. I do it myself.

Q- Do you try to get -- how do you try to get your patients to quit smoking?

A- Well, of course, it will vary from individual to individual. This is a personal thing and is individually tailored. There are, however, certain principles that we have found from the literature and from our own research over the years. Again, it depends on the age of the patient, their smoking habit, how long

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they've been smoking and what they understand of the problem.

But my own personal conviction is from the literature, from our experience, from our research experience, that it is extremely important for the physician to bring up at every visit to the office the question of the patient's smoking. And one does that, I think probably the first question I ask now is: what do you understand about smoking and health? Does smoking cause disease? Now, I'm interested to know what the patient responds.

Most of them say: yes, smoking is probably bad for my health.

I have been in the last three (3) years, three (3) or four (4) years, since I've been asking this question systematically, been dismayed -- disappointed anyway and dismayed, to find that from there on their knowledge is very murky, insufficient, certainly not specific. Well, the sort of response I may get is: well, yeah, some people say it may cause you a little lung trouble or there's maybe some people -- some people say it causes lung cancer.

Interestingly enough, the teenagers in high school, those that have stayed on to the later grades of high school, seem to do better at that. I believe I quoted a

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statistic which showed a fair number of high school students who will give you good responses to those questions.

Many of the patients with whom I deal who smoke, who have the diseases, smoking-related diseases, don't give very good responses or very accurate answers.

So their fund of knowledge, it seems to me, is deficient.

Q- Do you treat a lot of teenagers, doctor?

A- Some, yes.

Q- For what?

A- Various diseases. Bronchial asthma probably is a common one. Some are beginning to show chronic bronchitis -- cough and spit. They show recurrent acute bronchitis. They get a cold, it goes down to their chest and they all choke up and are sick for a week, two (2) weeks, three (3) weeks or they cough and spit all winter and don't do well. And for various other reasons, the results of accidents, when they have accidents to their chest wall, I see some T.B. exposures ...

Q- Do many of the teenagers that you see on a regular basis smoke?

A- Some do.

Q- When I say "see", I mean see in your office as patients.

A- Yes, some do.

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Q- M'hm. And do you talk to the teenagers the same way you talk to adults in respect of giving up the habit of smoking?

A- Somewhat the same way. We know from our work with the young people, the follow-up on our young -- grade 4, 5, 6, as we follow them into their teenage years, high school and those who have dropped out -- and from the literature as well. Teenagers do not respond well to threats or even discussions of future disease from smoking. Somehow, they don't -- they may make the connection for others and for this as a scientific fact, but they can't see -- it doesn't seem to mean much to them that: "You're going to get lung cancer when you're sixty (60) -- or fifty-five (55) or sixty-five (65)." This has not been a successful argument with teenagers. We learned that over the years -- "we", the profession.

8/0067 What seems to be important -- and the government is just getting on to this in our various areas of the country -- is the social concerns of teenagers, and I tell them: "You smell from stale tobacco, your clothes, your hair. Your teeth are a little bit brown, notice? Your fingers are brown." This makes you a little socially unacceptable. It goes along with what all of us are trying to do, to create the social atmosphere that this is an unacceptable behaviour or not socially

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acceptable. That seems to be an important thing to do, from the social science and medical literature on this subject, so we stress that area.

Q- Doctor ...

A- If they're athletes -- I'm sorry -- if they're athletes, they -- we tend to stress that part, that it does in fact interfere with their performance.

Q- They won't win the gold medal at the 100 meters in the Olympics, right?

A- Right.

Q- Doctor, have you formed an opinion as to why the quit rate of smoking is low?

Me CHERNIAK:

Well, first of all, My Lord, he hasn't said -- he hasn't given any opinion as to what the quit rate is, so it's an extremely leading and improper question, and again...

Me BAKER:

I agree with my friend, My Lord. I will set the question up.

Me CHERNIAK:

My friend -- I'm looking at the report at this moment with this in mind, but I can't remember anything in the report where he talks about the -- an opinion as to why -- what the quit rate is or why it's low. Maybe my friend can refresh my memory before we go further in

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this discussion.

Me BAKER:

My Lord, I think that Dr. Lefcoe has referred several times in his report to the fact that smoking is addictive.

Me CHERNIAK:

Well, but that's -- we've gone past that. The question is first of all what the ...

Me BAKER:

No, we've not gone past that, My Lord.

Me CHERNIAK:

... what the cessation rate is and why it is what it is. And this is a matter that if he's giving evidence on, I need the opportunity to prepare a cross-examination on. Now, maybe my friend can show me in the report what it is that -- that indicates an opinion on what the rate is, in other words research to know what the rate is and why it is what it is.

Me BAKER:

My Lord, at page ...

Me CHERNIAK:

Where do we find that in the report?

Me BAKER:

... at page three (3), My Lord, he talks about cessation programs and then at the bottom he says:

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"The only group which seems to give up the habit in large numbers are smokers who've had a heart attack."

Me CHERNIAK:

Fine. I think the doctor can give evidence about the heart attack ...

Me BAKER:

So he's talking about groups and habits in large numbers who aren't quitting, My Lord. So if he said that, I certainly can ask him the following question, My Lord.

Q- Do your patients with chronic obstructive lung disease quit in large numbers or small numbers?

A- Initially they...

Me CHERNIAK:

Wait a minute. We're just dealing with whether that's a proper question.

A- I'm sorry. I'm sorry.

Me CHERNIAK:

I wouldn't have any objection to that question, what I have an objection to is the question that my friend asked about his opinion as to why the cessation rate is so low. That's a very different question.

THE COURT:

He's withdrawn it now, so we have another question and there's no objection to that question? We'll see.

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Go ahead.

A- Do large numbers of people?

Me BAKER:

Q- Your patients with chronic obstructive lung disease, you say you tell them to quit smoking?

A- Yes.

Q- And do they quit?

A- Slowly. A few a year. A few every year. Quit rates in my patients, which we have surveyed carefully, run ten (10%), fifteen percent (15%) per annum. Ten (10%), fifteen percent (15%) of the remaining ones.

Q- Now, doctor...

A- Which is not much.

Q- No, continue.

A- No, go ahead.

Q- Now, when you have a patient with chronic obstructive lung disease, can the Court take it that you follow them as patients for a period of time?

A- Some I do, some I don't.

Q- M'hm. And the ones you do, you continuously talk to them about their smoking habit if they continue?

A- Every visit.

Q- Have you formed an opinion over the years, from talking to these people, as to why they find it so difficult to quit?

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A- Yes, I have certainly some thoughts on the subject.

Q- What are they?

A- They've been smoking a long time. Smoking is a pleasurable experience to them. Certainly we know that and they describe that. They enjoy smoking. It tends to relieve their stress, they say, and certainly when they try to stop, as most of them have for various reasons tried to stop, they have real problems. They have what we call fits into the various types of withdrawal symptoms. They unconsciously find themselves smoking, even though they didn't want to -- compulsive behaviour. They get very jittery, nervous, irritable. They say: "I'm hard to live with". The patient tells me that as part of the history, which is where I get my information. They say they have fights with their wives, their children won't talk to them. They become very irritable. They have difficulty carrying on at their jobs and eventually many of them say: "Well, I've been off for a week. I can't stand this any longer" -- and they go back to smoking, which relaxes them. So indeed it is a difficult problem for them.

Q- Thank you, doctor.

Me BAKER:

My Lord, I have no further questions.

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THE COURT:

We'll take the adjournment right now.

Me BAKER:

Oh, excuse me, My Lord, I forgot to produce the report. So why don't we take the break and get into that argument as soon as we come back.

THE COURT:

No, let's get the argument now and then start the ...

Me CHERNIAK:

Well, if my friend intends to produce the report, then I renew my submission with respect to the part of the report that I have referred to. My friend has not sought to even examine the doctor on that aspect of the report. Had he done so, I would have objected as being irrelevant. And I take the position that it is simply a matter not touched on at all in his evidence and it would have been irrelevant had he done so, and it is similarly irrelevant and inadmissible as a part of the report that my friend now tenders.

THE COURT:

I'll take the objection under reserve.

Me BAKER:

We'll file the curriculum vitae as Exhibit AG-158. And the report as AG-159.

Thank you, doctor.

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THE COURT:

You don't go away, because you'll be cross-examined.

Me BAKER:

Oh, he's been waiting for that for several months, My Lord.

SHORT RECESS

CROSS-EXAMINATION BY Me EARL CHERNIAK

on behalf of Petitioner, RJR-Macdonald Inc.

Q- Doctor, I'm interested in this -- in the committee of the Ontario Medical Association that you said that you were on that deals with smoking and health.

A- Yes.

Q- Is that a subcommittee of some larger committee or is it a committee of the O.M.A. itself?

A- It's a committee of the Ontario Medical Association. The whole committee does not deal -- I didn't mean to imply that the committee just dealt with smoking and health, it deals with public health issues in Ontario.

Q- And...

A- One of which is smoking.

Q- Yes. And how long have you been on that committee?

A- Six (6) years.

Q- And have you been chairman of that committee?

A- Yes.

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Q- And what has been your position on the committee?
A- I'm the resource person regarding smoking and health, broadly stated.
Q- And is that an active committee of the Ontario Medical Association?
A- Probably the most active committee of the Ontario Medical Association.
Q- And does it do things like does it take action with respect of legislation from time to time with positions one way or another or whether there should be legislation, shouldn't be legislation?
A- Being a committee of the Council of the Ontario Medical Association, it makes recommendations to Council.
Q- All right.
A- Council accepts or rejects these recommendations and publishes them and publicizes them.
Q- All right. So it's the Council of the Ontario Medical Association that does whatever it decides to do based on the recommendations of the committee, whether it follows them or not?
A- That's correct.
Q- And does the -- is the Ontario Medical Association, is that the Association of all Ontario doctors?
A- Yes.
Q- Affiliated with the Canadian Medical Association?

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A- Yes. Right.

Q- And among its activities does the Ontario Medical Association take political action, in other words: lobby for things that it thinks it should modify?

A- It makes recommendations which are publicized.

Q- And ...

A- Which involve, I suppose it would be political decisions, of course.

Q- But does it from time to time interact with government, for instance, if the Ontario government had some proposal that was going to be debated before a committee of the Ontario government, a legislative -- the committee -- might the O.M.A. send somebody there to ...

A- Absolutely. Absolutely.

Q- ... to deal with it?

A- We have representatives which spend a lot of time interacting with the Ministry of Health and with actual members of government on such issues, for example, as smoking, as immunization programs -- immunization for children, for adults -- water, the Great Lakes water situation. Air pollution.

Q- Okay. And you are sort of in charge of the branch of that committee that deals with smoking and health issues?

A- Yes.

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Q- And the Ontario Medical Association, through that committee, does from time to time, take political stances on smoking and health issues?

Me BAKER:

Perhaps, My Lord, my friend would define for the witness what he means by political stances. Politicians make political decisions and governments make laws.

Me CHERNIAK:

Oh, My Lord, the governing bodies or associates ...

THE COURT:

Your question was perfectly clear.

Me CHERNIAK:

Thank you.

Q- Does the Ontario Medical Association take political stances, take positions on things ...

A- They take a public position on issues, indeed.

Q- And indeed on ...

A- Of public health.

Q- ... from time to time on matters related to smoking and health?

A- Yes, indeed.

Q- Okay. And are you sort of the sole person that deals with smoking and health issues or do you sort of head a larger group that makes recommendations to the committee that makes recommendations to Council?

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A- I am the only person on the committee who is a resource person on smoking. If we had a large group on everything, the committee would be a huge committee, of course. But I -- part of my mandate is to consult with people in my field before producing a report for the committee. And I produce draft reports based on consulting with people in my field, and my own knowledge, of course, too. And these are debated within the committee and the committee members take them home and discuss them and bring them back to the committee. And in the end the document is ...

Q- And then ultimately the committee will make a recommendation to Council ...

A- Correct.

Q- ... which will adopt it or not adopt it ...

A- Correct.

Q- ... or modify it in some way.

A- Yes.

Q- And you've been doing that with respect to smoking and health for some six (6) years?

A- Yes.

Q- And is it fair to say that your activity with respect to that committee during that period of time has been -- has had to do with recommendations to do with banning smoking in a variety of places?

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A- Yes, one of our recommendations to Council at one point was that we supported any move the government would make towards banning smoking in the workplace and in public buildings.

Q- Yes.

A- Yes.

Q- And you were the sort of the spearhead of the subcommittee that reported to the committee that made a report that ultimately adopted that?

A- I assembled the information for the committee and put it before the committee.

Q- Yes.

A- The committee adopted a statement in that direction.

Q- All right. And in fact that has been one of the things that you have supported over a number of years, the banning of smoking in a variety of workplaces, other places?

A- Workplaces and in public buildings.

Q- Yes. All right. And would it be fair to say that your personal view is that smoking itself should be banned?

A- I didn't say that. Smoking should be banned?

Q- I'm asking you ...

A- No one should be allowed to smoke? That's not my personal view.

Q- But certainly it's your view, it's a view that you

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express to all of your patients, that they should not smoke?

A- Indeed. My patients who have a smoking-related illness, yes.

Q- But you, I take it then, from what you're saying, is that people that do not have smoking-related illnesses, you have no position as to whether they should or should not smoke?

A- No. No, if people ask me, I tell them. I tell them what I know about smoking and health.

Q- Yes, okay. And apart from your work with the Ontario Medical Association, have you been active in any other campaigns of any other groups, or on your own, to support a ban on smoking in a variety of public places?

A- I can't at the moment think of such an effort. I remember at one time there was a tremendous effort on at the University of Western Ontario to ban smoking in certain of the classrooms, and I stayed out of that argument.

Q- And, for instance, there are -- we read in the press from time to time, there are anti-smoking campaigns by certain organizations. Non-Smokers Rights Association or whatever they're called.

A- Yes.

Q- Have you ever taken part in any of their campaigns?

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A- Certainly not. I don't have anything to do with the Non-Smokers Rights Association.

Q- What is that document?

A- Well, I -- m'mm. I'd have to think about that for a moment. I think that ...

Q- Well, you ...

A- ... for a variety of reasons, a Non-Smokers Rights Association is an activist, publicity minded, abrasive, public group. I don't regard that as my role in life. I'm an academic. I try to be an academic, to weigh evidence on both sides. I don't have any stake in either side of this argument. I treat patients.

Q- Now, doctor, you've indicated that a good deal of your evidence comes from your clinical practice. Your experience comes from your clinical practice. Some from the research and the reading that you've done.

A- Yes.

Q- And as I understand your report, and I may have misunderstood your evidence, but I was looking at your report of a group of six hundred (600) patients in a row that you saw. You made an analysis and I think this is on page nine (9) of your report. Something less than half of those patients you were treating for tobacco-related diseases.

A- Yes.

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Q- The two hundred and thirty-seven (237) out of six hundred (600)?

A- Yes.

Q- So it would be -- so that would be -- three hundred (300) would be fifty percent (50%), so two thirty-seven (237) would be something less than fifty percent (50%)?

A- Yes. Yes. About forty percent (40%).

Q- So you do treat -- in the nature of the other diseases, the other three hundred and sixty-three (363) people of that six hundred (600) patient sample, what kind of diseases were they treated for?

A- Bronchial asthma, tuberculosis, fungus disease of the lung, trauma, that is accidents to the lungs, smashed ribs, smashed in lung and ...

THE COURT:

I missed the first one. T.B.?

A- T.B. -- fungus disease.

Q- No, before that? Bron...

Me CHERNIAK:

Bronchial asthma, My Lord.

A- Bronchial asthma. Asthma. Congenital -- that is a familial -- genetic problems such as cysts, fluid-filled areas in the lung, mal-development of part of the lung with resultant malfunction, abscess, infections of all kinds with different kinds of organisms, virus

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infections, bacterial infections, pneumonia.

Q- So...

A- Immune diseases.

Q- ... those diseases are, I take it, not related to tobacco use?

A- Not caused by tobacco, no.

Q- Not caused by tobacco?

A- Correct.

Q- Yes. So that when you said that the majority of your patients are smokers, what you meant was, I take it, the majority of the patients that see you for chronic obstructive lung disease, chronic bronchitis and the like are smokers?

A- Correct.

Q- You didn't mean to tell us that all of your patients are smokers?

A- Oh, no. No.

Q- Well, I think that's what you did tell us and that's why I'm clearing that up.

A- I'm sorry, if I did. I don't remember. But if I did, I ...

Q- That's the way I read your evidence and I just wanted to clear it up, because that was not the way I read your report.

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THE COURT:

That was the impression I had.

A- I apologize.

Me CHERNIAK:

Q- Yes, because it wasn't the way I read your report.

What you're saying is: that most of the two hundred and thirty-seven (237) out of six hundred (600) patients would be smokers?

A- M'hm.

Q- And -- but you deal with a lot of patients for a variety of things that are unrelated to tobacco use?

A- Yes.

Q- All right. I just want to make sure that I understood that properly.

A- May I just correct one point. Where I'm saying: most are smokers or had been smokers.

Q- Or have been smokers, of course.

A- M'hm.

Q- I really appreciate that, because that gets into the next point that I want to ask you about.

When you treat patients with chronic obstructive lung disease or chronic bronchitis, over what period of time do you ordinarily treat them?

A- I see them in consultation, and if it's a simple situation I make recommendations and I don't see them

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again, perhaps for a year. If it's an ongoing situation, I make recommendations and I feel that there is benefit in my seeing them again, either from their smoking situation or I want to add something on after they've quit smoking, I will see them two (2), three (3) four (4) times over a month or two (2).

I tend not to keep seeing them. After all, these are the patients of my colleagues out in the community, the family practice doctors. So I don't keep seeing them. But I tend to keep in touch, that is a year later, I'll say: well, come by in a year, come by in a year and a half and let's see what your F.E.V. I looks like. Let's see how you're making out with your various problems. Yes, I do that, and that's thought to be worthwhile.

Q- But do you commonly follow patients, say some significant proportion of the two hundred and thirty-seven (237) out of six hundred (600), do you follow them for sometimes two (2), three (3), four (4), five (5) years?

A- Yes, but only at yearly visits.

Q- Oh, I appreciate that.

A- Yes.

Q- Only -- and the reason ...

A- Some of them. Some of them, yes.

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Q- And the reason you only see them on a yearly basis is that there's no need for you to see them anymore?

A- Yes, their doctors are quite competent.

Q- Yes. And -- but I take it that when you see these people, you always tell them: quit smoking!

A- If they're still smoking, indeed.

Q- Of course, if they're still -- I guess if they're not smoking, then you don't have to go through the exercise, except maybe to reinforce the decision that they've made that you like -- right?

A- Right.

Q- And what you told us is that ten (10%) to fifteen percent (15%) of the people you see that you tell to quit smoking in fact take your advice?

A- Yes.

Q- And, of course, it's not just your advice, they are probably getting the same advice from their own physician -- right?

A- And their wife or their husband.

Q- And their wives or their husbands or their kids or the like -- right?

A- Correct.

Q- And no doubt when you see the family, you tell the family the same thing, that it would be a good idea if father and mother didn't continue to smoke -- right?

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A- Right.

Q- So if ten (10%) or fifteen percent (15%) quit basically every year, presumably, there is some cumulative effect of that quitting?

A- Yes.

Q- So over a period of...

THE COURT:

Is that every year?

Me CHERNIAK:

That's what he said, My Lord, every year.

A- Yes.

Q- So over a period of four (4) years, you're, you know, a constant, at least yearly, plus the other reinforcing mechanisms from family and the family doctor, over a period of three (3) or four (4) or five (5) years, probably close to half of your patients for these diseases, as long as they're still suffering from them and you're still seeing them, in fact, give it up; don't they?

A- Well, would that it were so. In the first place, we're talking about ten (10) -- say it's a hundred (100) people -- ten percent (10%) the first year is ten (10) people, ten percent (10%) of the ninety (90) is nine (9) people. Ten percent (10%) of the -- you know, the ones up.

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Q- All right.

A- So it's like the frog jumping for the end of the log, he never gets there.

Q- I'm not being -- I'm not being exact.

A- But on the other hand, we're talking about ten percent (10%) of the people whom I see to start with. As the years go by, we're left with what we call in the respiratory medicine field, the hard core. The people who have a terrible time quitting. So we accumulate, as the years go by, more and more of those. So that our success rate with older patients whom we've been talking to for a long time, our success rate drops some. I have to admit that.

Q- I mean, obviously, as you get towards a hundred percent (100%), it gets tougher and tougher because, as you say, you've got the hard core, because you get some people who can't quit because of these withdrawal symptoms and the like -- is that right?

A- Yes.

Q- But you've also got some people that say: I'm prepared to put up with it, I like smoking.

A- That's what they say.

Q- That's what they say?

A- M'hm.

Q- And to the people that say that, you've got no reason to

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disbelieve them, do you? It's what they say?

A- Well, I'm not an expert in that field. I am told --hearsay evidence, I suppose, but -- and I understand from what I read that people will say that in order to cover up for the fact that they just can't quit. So they say: "Well, I like it. I like it and I'm not going to quit."

Q- I'm not talking of what you read, doctor. I'm talking about...

A- Yes.

Q- ... people in your office that you talk with.

A- Yes. Some people say that, yes. Yes, some people do indeed say that.

Q- And the fact is, doctor, that it's well-known that millions and millions of North Americans quit smoking on a regular basis.

A- Yes.

Q- Yes. I think the figure for the United States is something like forty (40) to forty-five (45) million Americans are former smokers, have quit smoking.

A- Yes.

Q- You've heard that figure, have you not?

A- Yes, yes.

Q- And extrapolating, as we tend to do, for Canada, we're about ten percent (10%) of the American figures,

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generally speaking? You used that extrapolation on another matter in your evidence in chief.

11/0039 A- Fair.

Q- So it would be fair to say that -- that out of -- I don't know what the population of Canada is now -- somewhere between twenty-five (25) and thirty (30) million -- that Canada has got something like four (4) to four and a half (4.5) million former smokers in the population? Correct?

A- I would accept that figure. I don't have it and I will accept that as a reasonable figure.

Q- Because people, for whatever reason -- and maybe we'll get into some of the reasons later on in my examination of you -- for whatever reason, and notwithstanding whatever difficulties some people have, a great many people in fact quit? Right?

A- Yes. Yes.

Q- And, doctor, the way I -- you've talked about addiction in your examination in chief, I'm looking at your report, looking at where you talk about this matter at page ten (10) of your report -- sorry, I guess it's not page ten (10), it's page eleven (11) of your report, eleven (11) and twelve (12), where you talk about retirement -- I'm not quite sure what "retirement" means, what that heading means, but it's the body of it

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that I'm talking about and as I understand it, you -- you equate -- when you use the term "addiction", you use it as a synonym for the word "habit", don't you?

A- I use it as a synonym of the term "dependence". It's a little different. That's a little stronger term than "habit", I think. It's a medical term.

Q- Well, let's just...

Me BAKER:

Let him answer the question, Mr. Cherniak.

A- It's a medical term, I think.

Me CHERNIAK:

Q- I see.

A- And I use it in its full sense.

Q- Well, let's just see how you indeed -- and I'm not asking you at the moment how others use it, I'm asking you -- I'm trying to determine how you use it.

A- Right.

Q- To read what you said:

"Many continue with ..."

-- this is at the bottom of page eleven (11), My Lord --

"Many continue with their tobacco addiction."

So there's your use of the term "addiction"...

A- Yes.

Q- ... that Mr. Baker drew out of you in your examination

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in chief.

"Having all of this extra time on their hands after forced retirement ..."

-- I see. So we're talking about people who have retired from the work force.

"... makes it even more difficult for them to withdraw from the habit."

The habit being the lifelong habit of cigarette smoking, right?

A- M'hm.

Q- So I take it that what you -- when you use the word "habit" there, it's precisely the same habit as you described two (2) lines earlier, three (3) lines earlier, as an addiction? We're talking about the same thing or we're talking about something different?

A- Their smoking habit, all right? Yes.

Q- So would it be fair to say that on that page, when you used the word "addiction", you equated it with the word "habit" or vice versa? I mean, unless I don't understand the English language, that's the way it appears to me.

A- I have used here the word "habit".

Q- Yes, thank you. And then you go on to talk about levels of counselling service, number of successful people, et cetera, et cetera. And then -- then we get another

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mention of it on the top of page twelve (12). And I'll maybe just read the sentence before that.

"While most ongoing smokers by survey do indeed wish to quit, the number who are successful is still nowhere near what we would like it to be. Smoking is indeed a very pervasive, difficult habit to break."

Again you're talking about -- when you use the word "habit", you're talking about the same thing that you called "addiction" earlier in the -- at the start of the paragraph, am I correct?

A- M'hm.

Q- Yes?

A- Yes. I'm sorry, yes.

Q- And so would it be fair to say that when you say "addiction" you mean "habit"?

A- I think not.

Q- Well ...

A- If I may, let me disagree with that. A habit is ...

Q- Well just ...

Me BAKER:

Let him answer the question, Mr. Cherniak.

Me CHERNIAK:

Just a minute. Just a minute.

Q- Are you disagreeing with yourself?

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Me BAKER:

My Lord, he's...

A- I suppose I'm disagreeing with your equating of the two (2) terms.

Me CHERNIAK:

Q- No, I'm...

A- A habit is something which one does habitually, if I may say that. An addiction is a little more than that. One does something habitually and it's a habit, but it's -- as you know, it's more than that. It's something which, if you try to stop the habit, you have withdrawal symptoms, which we talked about before. There is tolerance to whatever the substance you're using. Tolerance develops so that you need more of it to produce the same -- same effects. There are all sorts of major and minor criteria which our colleagues in the drug field use to define the term "addiction".

I'm satisfied that the characteristics which my patients who have the smoking habit exhibit are enough, more than enough, to call this an addiction -- and I use the term, my colleagues use the term and we are not -- we are familiar with the field. We have to be, since we are chest physicians dealing with smoking.

Q- You see, doctor, it wasn't my use of the term that I was cross-examining you on, it was your use of the term.

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You started on it and I just -- you told you us that you are not an activist, you are an academic, you're a researcher as well as a clinician. Is that not right?

A- Correct.

Q- I understand what physicians like you who work at teaching, that university teaching hospitals do is that you spend your time, primarily on three (3) different branches of work. One is your clinical work and one is your teaching load and one is your research -- correct?

A- Yes.

Q- And that's really the practice of academic medicine, isn't it?

A- Yes.

Q- And that's what you've been doing for thirty (30) years?

A- Yes.

Q- And so insofar as your research is -- the research aspect of what you do is concerned, you would consider yourself a scientist, wouldn't you?

A- Yes.

Q- Yes. And scientists, I suggest to you, tend to use language precisely, do they not?

A- Try to.

Q- It's important to use language precisely, isn't it?

A- Try to.

Q- And I suggest to you that when you drafted your report

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here, you were engaging in a scientific exercise; correct?

A- In part, yes.

Q- And attempting to be precise about what you said -- were you not?

A- Yes.

Q- Yes. So when you wrote the paragraph that I have spoken to you about on page eleven (11) and twelve (12), you started off by referring to tobacco addiction:

"Many continue with their tobacco addiction."

Is that correct?

A- Yes.

Q- That's what you said?

A- Yes.

Q- And is not the rest of that section exposition of that proposition?

A- Yes.

Q- In other words, that's your premise, that's the premise of this section, and the balance of these two (2) paragraphs is the exposition of that proposition: why they do that -- correct?

A- Yes.

Q- Yes. And am I not correct, and you can read this with me or point out to anything -- point me out to anything that I've missed, that your only description of the fact

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that many continue the use of tobacco in your two (2) paragraph detailed exposition of the proposition is the two (2) places that I have referred you to in which you refer to what these people do, these lifelong smokers, as their habit. That's the language that you chose, doctor, not I chose -- not me. That's the language that you chose, is it not?

A- Yes.

Q- And I suggest to you that you did it because in your mind what these people have is a smoking habit, which is more or less difficult to break, depending on individuals, but it's a habit; isn't it?

A- Well, I would have to say, having had the benefit of your opinion here on how you read that, I would like to ...

Q- Well, excuse me, I don't give opinions.

A- No, I'm sorry. Having had the opinion of your reading of that, perhaps at this juncture I wish that I had used the term "addiction" throughout. Clearly this is what is meant, clearly that is what the description is about. I go on, having said what you said I said, to say: the comprehensive review in the nineteen eighty-eight (1988) report of the Surgeon General:

"... established nicotine as a highly addictive substance, comparable in

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physiological and psychological problems of the other addictive substances of abuse."

What I am doing there is drawing the comparison to what they say there and what my patients show and I'm attempting to show. It means they have a habit of smoking, but this habit is now an addiction -- is an addiction. They fulfill the criteria and that's really all I wanted to say in that section.

Q- You see, doctor, I wasn't asking you what the Surgeon General says. We'll have -- if the people we'll be dealing at some length based on the reports that I've seen from -- a person could spend their life dealing with dependents and addiction and the like, talking about that.

What I was asking -- what I was to find out -- what I was trying to find out is: what you, as a clinician, what you call what your patients, the ones who will not quit smoking do. And I suggest to you, doctor, what you call it is a habit.

A- With respect, I really -- I must disagree. I practice medicine, when I see somebody smoking, when I talk about it, if the question is asked or if it comes up or if it's appropriate, it's an addiction. It's addictive behaviour.

Q- But it's an addiction, doctor, that we know, from the

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earlier discussions that we had about the number of north Americans that have quit is certainly one that can be overcome and is overcome regularly by millions of people -- right?

A- It's inappropriate to use numbers. It's percentages you're interested in, if you're going to compare it with cocaine ...

Q- Well, I'm not ...

A- ... heroin and others, or alcohol.

Q- I'm not comparing ...

A- Because the numbers are so large, that sure you can use four point five million (4,500,000), but consider the number of people that are smoking.

Q- I'm not comparing it with anybody -- with anything at the moment, I'm simply indicating to you that there are millions of people who, whatever we call the smoking phenomenon -- to use a neutral word -- millions of people that can break it?

A- Yes. My point was, though, and I would like to, if I may, to deal with it. Perhaps in talking about it or thinking about it, to use the absolute term millions, it would seem to convey that everyone who smokes can quit, because there are so many. The fact is, there are so many millions who smoke that indeed the four point five million (4,500,000) is not at any time all of them or

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even a percent -- a sizable percentage of them. Whereas if you were to say that -- you can't say that millions of people who are heroin addicted or morphine addicted have quit because not that many people take the substance to start with. So one must compare them in terms of percentages. What percent?

Q- You don't think that four million (4,000,000) Canadians is a substantial proportion of the number of Canadians who have smoked?

A- It is a substantial proportion.

Q- Yes. I just understood you to say, a moment ago, that forty million (40,000,000) Americans or four million (4,000,000) Canadians is not a substantial proportion of people who at one time smoked or still smoke. It is a substantial proportion, isn't it?

THE COURT:

What the doctor is saying is that you have to compare the quitting rate percentages with other addictive "substances." Do you mentioned cocaine, alcohol, morphine or other. You have the percentages of persons quitting cocaine or alcohol?

A- I do not have those percentages, no, sir.

Q- You don't or you do?

A- I do not have those percentages.

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Me CHERNIAK:

Q- If I suggested to you -- and there will undoubtedly will be other evidence on this -- if I suggested to you that something of the order of fifty percent (50%) of anybody, of all North Americans, whoever smoked don't smoke now, have quit; would you think that's about right? Maybe you have no opinion, I don't know.

A- That's the number which is quoted, yes.

Q- Yes.

A- Who have ever smoked.

Q- Yes. Don't smoke now?

A- Yes.

Q- So if -- to an extent that's right, and I appreciate you haven't done any research on that, but to the extent that's right, that fifty percent (50%) of North Americans have ever smoked, don't smoke now, that's a pretty significant quitting rate, isn't it?

A- Yes. It is significant.

Q- For instance, to the extent that one would call use of alcohol an addiction, we'll find out in a moment, whether you do or not, but nothing like fifty percent (50%) of the people who have ever used alcohol abstain from alcohol. Wouldn't that be fair?

A- Unfortunately, I don't know the figures on alcohol. I have no idea of what the figures are on people who have

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ever used alcohol.

Q- Just from your common experience, doctor, it's not fifty percent (50%) or anything like that, is it?

A- Of those who are addicted to alcohol. I'm sorry, I must back out of that. I have no idea.

Q- Well, okay. Let's put it ...

THE COURT:

You opened the door ...

A- I wish I could ...

Me CHERNIAK:

Let's just understand. Let me understand. You take the view then that -- and we're only talking about those who are addicted to alcohol -- so I take it that you would equate alcohol use with an addiction then, or some alcohol use with an addiction?

A- Yes, some alcohol use, yes, clearly.

Q- Okay. So ...

A- Clearly.

Q- ... with respect to alcohol then, when you use the term addiction, you mean the persons who are alcoholics?

A- Yes.

Q- Is that what you mean?

A- Some of those, yes. Yes.

Q- But would you include, say, the person who has one (1) or two (2) drinks before dinner two (2) or three (3)

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times a week and maybe has a half a bottle of wine or so on the weekend.

A- Yes.

Q- Is that person an alcoholic in your definition of an alcoholic?

A- I don't think so. I'm not an expert in that field, but as a physician, I don't think that person would be classified as an alcoholic, no.

Q- Right. In other words, such a person would be classified in the broad range of moderate usage of alcohol, would they?

A- Yes.

Q- And they wouldn't be addicts -- right? In your definition.

A- Right.

Q- Only those persons who abuse alcohol are addicts, in your definition -- is that right?

A- Who exhibit compulsive behaviour.

Q- Yes.

A- Get pleasurable effects, they all do that ...

Q- Well ...

A- ... who have great problems, withdrawal symptoms on stopping.

Q- Well, doctor, you don't suggest that the moderate drinkers don't get pleasure from their drink of scotch

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before dinner and perhaps the occasional half bottle of wine on the weekend or even during the week?

A- Oh, I agree. That's only one of the criteria.

Q- But they do get pleasure from it?

A- I'm sure they do.

Q- Yes. And would you not agree that should those persons decide to give up alcohol, that they would suffer some kind of withdrawal symptoms from doing so?

A- No.

Q- You don't think they would. You don't think a person who has been a moderate drinker of the type we've talked about for thirty (30) years, he gave up drinking that he would suffer some kind of ...

A- He might want a drink, but I don't think if he were a social -- as we call it, a "social," moderate drinker -- that he would have the tremendous cravings, the inability to concentrate, the nervousness, the difficulty in mentation -- oh, no, I don't think so. If he did, he's an addict. He's addicted.

Q- But he or she would certainly have difficulty doing it?

A- He wouldn't like to. I suppose I'd be willing to go that far.

Q- All right. But, doctor, the distinction in alcohol use between a habit and an addiction is the use or abuse of alcohol, correct?

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A- Well, I didn't use the term habit at all for alcohol, did I?
Q- Well, okay. What would the ...
A- Somebody who drinks.
Q- You've indicated to us that the alcohol addicts are the ones who abuse it, the ones who are alcoholics, right?
A- All right.
Q- What do you call the moderate drinker who has, for thirty (30) years, done a level of drinking that we've just talked about: a few drinks a week and a bottle or two (2) of wine -- half a bottle or two (2) of wine sometime during the week. Don't they have a habit of drinking alcohol?
A- I'm sorry. I don't call him anything. He's someone who drinks alcohol occasionally.
Q- Well, let's call them something. Let's call them something, doctor, they have the alcohol habit, don't they?
A- No, I'm terribly sorry. He's somebody who takes an occasional social drink of alcohol. I'm not ...
Q- So it's not a habit with them? But they are not addicts?
A- Oh, all right, they're not addicts, no.
Q- All right. So, doctor, does the same thing apply to cigarette use? There are -- the moderate use of tobacco

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is -- is not a habit and not an addiction?

A- Oh, we're in a different league here.

Q- Oh, in a different league. I see.

A- A completely different league, in my view.

Q- So everybody then ...

A- There is a rare person who can smoke and quit and have no problem. No question, a rare person.

Q- We're not talking about quitting for the moment.

A- Oh, sorry.

Q- We're talking about use of tobacco.

A- Yes.

Q- I mean, there are some people that use a great deal of tobacco, smoke in excess of one (1) pack, maybe even considerably more than that in a day, are there not?

A- Yes, there are.

Q- And there are some people that do not smoke to that degree. There are some people who might smoke anywhere from one (1) to ten (10) cigarettes on a regular basis during...

A- Yes.

Q- ... a day. On a regular basis, correct?

13/0039 A- Yes.

Q- And never smoke any more than that? There are people who ...

A- I suppose there are some ...

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Q- Yes.

A- ... who do not increase their cigarette smoking beyond ten (10) cigarettes a day.

Q- And that's even becoming, I suggest to you, more -- more common as it becomes harder and harder to smoke in the workplace and airplanes and public buildings and the like, isn't it?

A- I won't agree for that for one reason. Some of the appraisals of what is happening in our community tend to suggest that although large numbers of people are quitting, it is the light smokers, light to moderate smokers, who are quitting and the heavy smokers are keeping on. So that doesn't jive with what was just said.

Q- No, no. Well, no, it doesn't jive. I think it is totally irrelevant to it. The fact is that people, you know, can't smoke, even heavy smokers can't smoke at times of the day that they used to smoke. That is a fact, isn't it?

A- But what we have in the community is more heavy smokers and fewer light smokers.

Q- All right. The point is that there are light smokers out there.

A- There are some.

Q- Yes. And you don't know how many there are because you

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never made a study, do you?

A- No, that's correct.

Q- Now, are those light smokers addicts? Do they have an addiction or do they have a habit?

A- I'm sure some of them are addicted. Apply the tests of addiction. At some point, I suppose, in someone who smokes a few cigarettes, one would be entitled to say this is not as yet an addiction. I mean, that's ...

Q- Let's say they've been doing it for thirty (30) years then.

Me BAKER:

Please, let him answer the question, Mr. Cherniak. My Lord, he's not here to fight with the witness. He's here to ask him questions and listen to answers.

A- I'm sure there are some people -- there are some people who smoke, I'm sure, who smoke small amounts, who, although they achieve some pleasure from it, do not exhibit compulsive behaviour, that is if there are no cigarettes around, they don't go charging around looking for smokes and tapping strangers on the shoulder or looking for a cigarette or going out to store -- compulsive behaviour -- and who, if you separate them from the cigarettes for a day, do not get irritable. I mean, there are some people, but there are many light smokers -- one (1) to ten (10) a day -- who do exhibit

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that exact behaviour, particularly if they are early on in their smoking career.

Q- So -- so, okay, so ...

A- So they're addicted.

Q- I'm just trying to understand what you mean, as you're one of the first witnesses who has talked about this matter. What you mean by -- and of course, you've had great experience with smokers -- what you mean by "addiction". So we know what you mean with respect to alcohol, we've dealt with that.

So the smokers who are addicted are the ones who, whether they're heavy smokers or light smokers, exhibit this compulsive behaviour. If there is no cigarettes around, they have to dash out and get cigarettes or bum cigarettes from people or get all nervous and the like, but smokers who don't exhibit that compulsive kind of behaviour, they just have a habit? They just have a smoking habit? They're not ...

A- They smoke, yes.

Q- They're -- they smoke, they're not addicted.

A- M'hm.

Q- Is that correct?

A- Yes.

Q- So there is a distinction. Some smokers have an addiction to smoking and some just have the habit? Is

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that your evidence, doctor?

A- I wouldn't have put it quite that way. Your Lordship, I'm here as a physician. I know that smoking, in the patients whom I see, who have problems quitting, are clearly addicted. We also know from our surveys out there that there are millions of people out there who are addicted, so that smoking by and large is an addiction.

Nevertheless, I'm sure my friend, Mr. Cherniak, has made a point, that perhaps there are a few people -- and these are people who tend to be early on in their career, just starting smoking -- who are not yet "addicted". That would be my position.

Q- Well, of course, doctor, you're the one who used the word "habit", not me...

A- Yes.

Q- ... in your report, and I'm trying to define what you meant by it. So, doctor, if we had a thirty (30) year smoker who likes to smoke a few cigarettes a day, he or she gets home at night, maybe a couple during the day, eight (8) to ten (10) cigarettes a day, been doing it for thirty (30) years, doesn't exhibit any of the compulsive behaviour if they happen to be deprived for some period of time, you say that person is an addict?

A- May not be.

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Q- May not be.

A- May not be.

Q- Okay. So at least we understand it. Some smokers are -- not all smokers are addicts. Some are, some aren't.

A- The vast majority are. Let me -- let me say that.

Q- No matter how much they smoke, in your view?

A- Yes.

Q- Okay. And I guess then, you would wish you'd just had a different choice of words in your report.

A- Quite.

Q- Yes.

A- Quite. It's interesting, now I think about it, that when we do our work with children and we see the children, we follow the young kiddies, grade fours -- eight (8), nine (9) years old -- there are ones there who experiment. You ask them, when you can find them, you ask: "Do you smoke", occasionally they have a cigarette a week. Occasionally, they experiment -- they've experimented. They've tried it last week. They come back the next year and they're smoking every day. The figures for children which we have from our own work, which bears on this subject -- bears, in my experience, on the subject -- that later on, when we survey these kids when they are in high school, fifty-four percent (54%) of them, including the

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experimenters and the regular dailies and occasional smokers, fifty-four percent (54%) of them had increased their smoking habit, four percent (4%) had decreased their smoking habit. That's an important observation, I think.

Q- And forty percent (40%) of them still smoked one (1) a day? Is that what you mean?

A- Who have increased their smoking habit.

Q- No, no, you said fifty-four (54%) increased.

A- Fifty-four (54%) increased and four percent (4%), four percent (4%) ...

Q- So we get forty ...

A- ... decreased.

Q- We have to get forty-two percent (42%) left, don't we?

A- Oh, these are of all the kids. I'm sorry, these are of all the kids who we initially saw. So that the forty percent (40%) ...

Q- Are you saying that fifty-four percent (54%) of children smoke?

A- No, no, fifty-four percent (54%) of the ones who said they smoked ...

Q- Yes.

A- ... had increased.

Q- Yes.

A- Four percent (4%) had decreased and the rest stayed the

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same.

Q- That's what I said.

A- Yes.

Q- The forty percent (40%) stayed the same?

A- I'm sorry. Yes. Yes. Yes.

Q- Okay, doctor. Now, one other thing, you referred in your evidence to a graph on page ten (10), and this is the Fletcher graph. I just want to make sure that I understand that.

You've got three (3) lines, three (3) heavy lines on the top of this graph, and I take it the three (3) heavy lines are representative of non-smokers?

A- And smokers whose smoke does not effect them.

Q- I see. Smokers who smoke and are not affected. So that's one of the next things I'm getting to. There are smokers who are even lifelong smokers who for one reason or another, for reasons that are not fully understood, are not affected. Their F.E.V. I, their forced expiration -- is that velocity or volume?

A- Volume.

Q- *Forced expiration volume.*

A- M'hm.

Q- In other words, the amount that they can blow out of their lungs is unaffected by their tobacco use?

A- Yes.

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Q- Yes. And that's a well-known but poorly understood fact, isn't it?

A- Yes, some get it and some don't.

Q- Yes.

A- It's a biologic phenomenon.

Q- It's a biological phenomenon.

A- If you do, if you assault a biologic organism with increasing amounts of some stimulus, more and more get it, but not all get it at any one level.

Q- So that top bar includes smokers and non-smokers.

A- Yes.

Q- Or at least the top three (3) bars include smokers and non-smokers.

A- Yes.

Q- And, of course, even that doesn't include everybody. There are some people who, for one reason or another, go down very little, and there are some people that might go down more, even if they're not smokers?

A- One is often asked why did Dr. Fletcher choose to give three (3) bars instead of just one? Well, he could just have done -- well, we tend to think of that as the range. That is the range. Those who go down very little is the top line, those who go down a lot is the bottom line. And that's the way we view it.

Q- Yes. And then we get to the other line, and I take it

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the other heavy line, and that is those persons who are regular smokers. In other words, who have smoked for a long period of time.

A- Regularly. That's not necessarily long.

Q- Well, regularly, since age twenty-five (25).

A- Yes.

Q- That's what the graph means, isn't it?

A- M'hm. Yes.

Q- Who were smoking at age twenty-five (25) and have continued to smoke -- or maybe they started at age twenty-six (26) and started to smoke regularly -- right?

A- Yes. Yes.

Q- Now, of course, that is, of course, just an average.

A- Yes.

Q- Not everybody follows that curve?

A- Correct.

Q- Some of those who are somewhat -- who are susceptible with tobacco might be on a bar that would be a lot higher than that bar and some would be lower?

A- Right.

Q- Okay. But we're dealing with averages here, if I understand the graph?

A- Yes. Yes, that is correct.

Q- And as I understand -- if I am reading it right -- and your job is regularly reading graphs, mine isn't -- the

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age is going to reduce forced expiration volume by a percentage in everybody?

A- Yes, indeed.

Q- And in the people who are in the unfortunate group that smoke regularly and are susceptible to the effects of smoking, they get down to the level where they become disabled sooner than would persons who have never smoked and are not susceptible to smoke -- is that right?

A- Yes, that is the graph.

Q- But I take it that if even that fortunate favoured group live long enough, they get down to the disability level at some point too?

A- Yes, if they live long enough.

Q- If they live long enough, sure. And no doubt, some of them do.

A- It's of interest, Your Lordship, that somebody extrapolated those lines to the right and found they crossed the death line at age a hundred and twenty (120), the disability line somewhat before that. So, indeed, lung function deteriorates ...

Q- Well, of course, that's the average.

A- ... for many things.

Q- That's the average, but ...

A- On average.

Q- ... some people who never smoked and are not susceptible

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are going to hit the line before a hundred and twenty (120)?

A- Quite.

Q- All right. If they live long enough to hit that line. But the average, as I understand it, of the regular susceptible smokers, if we can so call them, the average when they hit the disability line appears to be about age sixty-seven (67)?

A- Yes.

Q- Am I reading that graph right or not?

A- Correct.

Q- And the average age of death for those persons who smoked regularly are susceptible to its effects and continue to smoke even past age sixty-seven (67) regularly, the average age of death of those people is about age seventy-three (73) -- right? I mean, am I reading the graph right or not?

A- Indeed, you are -- indeed. That is correct.

Q- And, of course, some of those people who die at age seventy-three (73) or who are in that group, some of them, of course, may contract a lot of diseases that are not tobacco related, they cause their death; right?

A- Absolutely.

Q- Because when you get up to that age, more than tobacco-related diseases can kill you -- right?

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A- Absolutely.
Q- All right. But the point is that the average age of the worst category in the -- the average age of disability and of death is in the worst category in Fletcher's group is sixty-seven (67) and seventy-three (73) plus or minus, respectively?
A- That's an average. That's an average group.
Q- Of course it's an average.
A- It's not the worst.
Q- Of course, it's not the worst ...
A- I'm sorry, I beg your pardon.
Q- ... but there are -- because it's an average there are at least as many regular smokers, regular susceptible smokers who live longer than seventy-three (73) as there are who die for one reason or another before seventy-three (73), right?
A- This is an excellent interpretation of the graph. I would agree.
Q- I just want to make sure I understand. My knowledge of graphs is limited to my economics courses.

But what Fletcher also shows is that if someone quits at age forty -- no, it's about fifty (50), age fifty (50), if I'm reading the graph right.

A- Stopped at forty-five (45) he says.
Q- Oh, forty-five (45), okay. I was just trying to

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extrapolate the graph up there. Maybe -- at any rate, it's say age fifty (50). And, presumably, have been smoking for at least then twenty-five (25) years and maybe more, regularly smoking and susceptible for at least twenty-five (25) years, that group, if they quit, on average, won't hit the disability line with the degree of problems from their smoking until -- it looks like about age eighty (80) to me.

A- Seventy-seven (77), seventy-eight (78), yes.

Q- Not if I read that graph right. That ...

A- Oh, I'm sorry, you're right. Eighty (80), yes.

Q- Yes, it's eighty (80) or maybe a little more.

A- Yes, indeed. Quite.

Q- And we have to extrapolate further to see when the average death would be -- correct?

A- Correct.

Q- And those figures, seventy-three (73) to eighty (80) something are not all that different than the average life expectancy of people of the twenty-five (25) year olds, are they?

A- Well, now you've stepped into the problem of -- you have stepped into the problem of life expectancy at birth ...

Q- No, I'm not ...

A- ... life expectancy at age twenty-five (25).

Q- Well, no, I haven't stepped into that ...

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A- And life expectancy at age sixty (60) or forty-five (45). The older you get, the longer your life expectancy. I'm sixty-four (64), my life expectancy is not six (6) years, my life expectancy is twenty (20) years, on average.

Q- My Lord, I didn't step into that problem. I asked him a specific question.

A- I'm sorry.

Q- I said those ages are very different than your life expectancy at age twenty-five (25). That was my question.

A- A little different, but again ...

Q- Yes, a little different.

A- ... it comes with the problem of how one -- when one does this sort of research -- everybody who does long-term research is faced with the problem of what to do with people who have an automobile accident at age thirty (30). What do you do with them? Does that drag your graph away down to the left? Does that raise your mortality rate? How do you handle it? It's a terrible problem for statisticians. Dr. Fletcher dropped them out and left the ones who were still going.

THE COURT:

We will pursue at two fifteen (2H15).

LUNCH ADJOURNMENT

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In the year of Our Lord nineteen hundred and ninety (1990), on this twenty-seventh (27th) day of the month of February, PERSONALLY CAME AND APPEARED:

Me CHERNIAK:

For RJR-Macdonald, Earl Cherniak and Michel Pinsonneault.

Me DUNBERRY:

Pour Imperial, maître Eric Dunberry.

Me BAKER:

Pour le Procureur général, Roger Baker et Claude Joyal.

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In the year of Our Lord nineteen hundred and ninety (1990), on this twenty-seventh (27th) day of the month of February, PERSONALLY CAME AND APPEARED:

NEVILLE LEFCOE,

WHO, being under the same oath, doth depose and say as follows:

CROSS-EXAMINATION BY Me EARL A. CHERNIAK, Q.C. (CONTD), On behalf of Petitioner, RJR-Macdonald Inc.:

Q- Doctor Lefcoe, I just want to pick up on one thing that you said before lunch. I forgot to pick up on it when you were giving your evidence. When we were talking about smoking being an addiction or a habit, you threw in the word "dependence".

A- Yes.

Q- Is that another word that you would use?

A- Yes, dependence and -- and addiction, I think, are interchangeable words.

Q- Interchangeable, yes. Okay. All right. Now, would I be correct if I suggested to you that -- that not all smokers are affected with either chronic bronchitis or chronic airway obstruction?

A- Quite, yes.

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Q- And would I be correct if I suggested to you that a majority of individuals with chronic bronchitis continue smoking with little deterioration in lung function?

15/0087 A- With chronic bronchitis.

Q- A majority of individuals with chronic bronchitis continue smoking with little deterioration of lung function?

A- Yes, inasmuch as people with chronic bronchitis don't have -- don't have impaired lung function, yes, a majority probably will not.

Q- And would I be correct if I suggested to you that with respect to C.O.P.D., chronic obstructive pulmonary disease -- which I guess is the same as chronic obstructive lung disease ...

A- Yes.

Q- ... as they're interchangeable terms -- that really exactly why that happens, the etiology -- to use what I understand is the medical term -- is uncertain? It's not understood?

A- It's not understood why some people who smoke get it and others who don't ...

Q- Yes.

A- ... others who smoke don't get it.

Q- So in fact, why the majority of smokers don't get it.

A- It's not understood completely.

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Q- Yes. And in fact, would I be correct if I suggested to you that less than twenty percent (20%) of smokers develop significant airway obstruction?

A- I would agree that fewer than twenty percent (20%) of smokers develop airway obstruction.

Q- And would I be correct if I suggested to you that only -- that a small proportion of smokers only develop emphysema, which is, as you indicated, was a particular kind of obstructive disease?

A- Correct.

Q- And no one knows why it is that only a few smokers develop emphysema?

A- Emphysema -- may I just interject very briefly? Emphysema is a disease of increasing age, so that if one plots the development of emphysema as one gets into the older, seventy (70) plus age group, one sees rapidly increasing evidence of emphysema, these are in autopsy studies, things like autopsy studies, yes, but I would agree with your statement, yes.

Q- The proposition is that you have said that chronic bronchitis and chronic obstructive lung disease and emphysema, being a branch of that, are related to and, you say, caused by smoking?

A- Yes.

Q- And what I'm asking you now is, is it -- what I'm

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putting to you now that it's unknown why, although there is what you say is that causal relationship which is based, as I understood what you said this morning, on statistical analysis a disproportionate number of smokers get the disease, the point is that no one knows why it's only a small percentage of smokers that get these various diseases?

A- Yes.

Q- First of all, it's true that it's only a small percentage and secondly, no one knows why that is. Both of those propositions are true, am I not right?

A- Yes.

Q- And in fact would you agree that with respect to many acute and chronic lung diseases the pathogenesis of them, which would be another way to say the pathological ideology remains a mystery? Is that fair to say?

A- Would you be specific? Could we be specific here and say which diseases are we talking about?

Q- Well, in particular, the ones I'm talking about, chronic bronchitis, the kind that causes people to cough regularly, and chronic obstructive lung disease. Let's take those two (2).

A- Well, may I just take a moment to explain the position. It's not quite: we don't know anything about it. It's not quite that simple.

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Q- My Lord, I wonder whether I could get an answer to the question. The doctor wants to expand on it, I think that's fair.

Me BAKER:

I think he's getting ...

Me CHERNIAK:

I think -- but what I'd like is an answer to my question. I won't restrict him from expanding on it.

THE COURT:

Well, I think he's answering now.

Me BAKER:

He was about to.

A- We don't really know, we can't just point to all the steps. We know in people whose lungs are exposed to irritation, and the most commonly known, by far, of course, is the smoke from cigarettes, that the small tubes become irritated. And this is demonstrated when the person happens to have an operation or an accident and they've just started smoking a couple of years and a piece of lung must come out and it's looked at. And the smokers, compared to non-smokers, one can see changes in the small tubes, inflammation. By inflammation, I mean it swells, there's protein and fluid in the wall, a collection of inflammatory cells, white cells. And it's inflamed, and sometimes the lining, the inside lining,

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the tube ulcerates, sloughs off and it bares the interior tube.

And as the years go by and the smoking gets greater and greater, this lesion increases and moves more from the periphery into the larger tubes near the middle.

Now, that's not exactly saying why it happens in some people and not others, but it is a description of what is going on. And in some people it never reaches the stage where these people get symptoms from it. But on pathologic section, one can see these changes in virtually all people who are exposed to the stimuli like smoke, so that the disease is going on and we can describe changes. Whether one wants to say that this is a description of how it happens and what the complete mechanism is, is almost a philosophic point, to my way of thinking.

Q- Doctor, what does the word "pathogenesis" mean?

A- What the changes are, how it -- how something develops. How the pathology develops.

Q- The pathology -- in other words, what you can see on a microscopic examination of the ...

A- Yes. Yes.

Q- Now -- now you'd better wait till I finish my question. All right.

A- Sorry.

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Q- What you can see when you look at slides of the process?

A- Yes.

Q- Among other things, or look at it clinically? If you can see something looking at it clinically.

A- Physiologically, yes, all the ways.

Q- All right. Now, I'm going to put this proposition to you and I want you to tell me whether you agree with it or not.

Until the basic steps of the inflammatory process are fully understood, the pathogenesis prevention and treatment of obstructive lung disease is likely to remain largely hypothetical?

A- Thoroughly disagree.

Q- You thoroughly disagree with that?

A- Thoroughly disagree with that statement.

Q- Okay. Are you familiar with a publication called: "Clinical Science?"

A- Yes.

Q- Is that a peer reviewed publication that deals in part with ...

A- Yes, to my knowledge it is.

Q- In your field?

A- Yes.

Q- Right. And are you familiar with a man named R.A. Stockley, from the General Hospital in Birmingham in the

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United ...

A- I don't know the name. I do not know the name.

Q- All right. And well, then, I want to ask you if you are familiar with a -- and would regard as authoritative -- a publication in the journal of Clinical Science in nineteen eighty-three (1983) with the heading: "Proteolytic Enzymes, Their Inhibitors in Lung Diseases?"

A- Yes, I would regard that as a worthwhile article and probably -- and it's in a peer review journal. It's an opinion I would certainly read and possibly pay attention to, yes. Yes, indeed.

Q- Would it one that you may well have read in the course of your general reading?

A- It is, indeed, possible, yes.

Q- You do refer to that journal from time to time?

A- I read current contents and I select the titles. I do not subscribe to Clinical Science.

Q- But at the time it came out, would that be one that ...

A- I might have, yes, indeed.

Q- At any rate. It's a peer review journal and that sounds like the kind of article that would be of interest to you -- is that correct?

I'd like to show you a copy.

I think, My Lord, that I won't offer it as an

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exhibit until we go a little further with it to see whether the doctor does regard it as authoritative.

THE COURT:

He doesn't even know the man.

Me CHERNIAK:

Well, perhaps we can draw on him to see what he says about it. He said the journal was authoritative and the article sounds like something he would regard as authoritative and he may well have read.

THE COURT:

There's no such thing as a publication being authoritative in the expert's field. It doesn't make sense. Magazines or Review are not authoritative. They carry on articles which may be authoritative, because the author has said something which is ...

Me CHERNIAK:

My Lord, that's why I want to read him some of this. He can say he doesn't agree, he doesn't know anything about it, or he can say: yes, that sounds reasonable. If he does, then I'll tender it.

Me BAKER:

My Lord, the witness has already said that he has never heard of the author.

THE COURT:

I know that.

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Me CHERNIAK:

My Lord, I'm going to put some propositions to him ...

THE COURT:

Put some propositions and see if he agrees with it.

Me CHERNIAK:

And for convenience, I've got the article in front of him and we can see what he says about it.

Me BAKER:

Well, then, I'd note this request to the Court then, if he's going to put questions to him on an article by an author who he's never heard of and which he has said he's never read, because he's never heard of the author, then perhaps the witness might have a moment to look at the article because what is said in one paragraph on one page may be attenuated or qualified in some way by the same author further down.

So before Mr. Cherniak puts any questions to him in respect of that article, I would submit that Dr. Lefcoe have an opportunity to look at it.

Me CHERNIAK:

Well, My Lord, we'll be forever in cross-examination, if we have to do that.

Me BAKER:

Well ...

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THE COURT:

Well, we've been through that before. Unless you intend to produce that by some other people, why use the article because it will have no -- absolutely no bearing, no value.

Me CHERNIAK:

Because the doctor may well agree with the propositions I put to him, My Lord, that's why.

THE COURT:

Well, why don't you ask him questions: do you agree with that. And if he agrees, yes, and if he doesn't, no, and if you have proof later on that will contradict the man, that's it.

Me BAKER:

I have to make an assumption, My Lord, that the first question Mr. Cherniak put, which was before he even referred to the article, was a proposition with which the witness said he categorically disagreed.

THE COURT:

He said "thoroughly" disagreed.

Me BAKER:

You've got a better memory than I do, because you noted it, but it's the same -- it's a distinction without a difference. Now, if that's the thesis from that article that Mr. Cherniak is trying to pull out of it, then this

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witness has already said he has disagreed. So how could he then go on to say that -- try and prove through this witness that this is an authoritative article?

Me CHERNIAK:

Well, I thought this was cross-examination. I'm entitled to do just that. To try to do just that.

THE COURT:

Not the way you're doing it. I'm sorry. I don't agree.

Me CHERNIAK:

Well, My Lord, I'll just put some propositions to the witness and see whether he agrees with it or doesn't agree to it. I've got something before him, so it's as a matter of convenience, so that he doesn't just have to listen to what I say; he can read the proposition.

May I proceed on that basis, My Lord.

THE COURT:

Proceed again. If there is an objection, I'll decide them as, if and when they come up.

Me CHERNIAK:

Thank you, My Lord.

Q- There's this proposition that is on the first page, the very -- the very first paragraph where the author says this:

"The pathogenesis of many acute and chronic lung disease remains a mystery.

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However, recent years have seen a rapidly increasing interest in the role of proteolytic enzymes and their inhibitors in modifying the inflammatory destructive and reparative changes that occur in the lung."

Now, do you agree with that proposition?

A- Yes.

Q- Okay, and maybe you can just explain to us what the author means by proteolytic enzymes and their inhibitors in modifying the inflammatory destructive and reparative changes that occur in the lung? And I guess I phrased that improperly.

Me BAKER:

Certainly it is not for this witness to explain what somebody else wrote in an article, My Lord.

Me CHERNIAK:

Q- No, no, tell us what you understand that to mean, doctor?

A- This will take a moment or two, if I may. Back in the nineteen sixties (1960s), a Swedish group, to my knowledge -- and I'm afraid I forget their name, described a -- a group of patients who had a deficiency in an enzyme called alpha 1 antitrypsin and some of these patients had a deficiency, a hereditary deficiency

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in alpha 1 antitrypsin and -- and it was shown that this was genetically based, carried on certain genes, and if the patient, the individual who was homozygous for the recessive gene, that is, he didn't have any alpha 1 and was unable to make significant amounts of alpha 1 antitrypsin then this enzyme was deficient in -- particularly in his lung tissue -- so that the balance in the lung, the inflammatory and anti-inflammatory balance of some of the tissues was out of balance so that if the lung were invaded, for example, by an organism or if some irritating chemicals were loose in the lung, the body would respond in a certain way and one (1) of the ways the body responds is to produce enzymes which destroy these invading tissues or invading chemicals -- trypsin belonging to the class of proteins called proteinases. They break down from proteins. They also, unfortunately, break down the patient's own proteins if allowed to get in too great concentration.

Everyone, except for these genetically inherited alpha 1 antitrypsin deficiency people have enough antitrypsin, anti-proteinases in their serum, in their tissues, to just keep the thing nicely in balance; but if these people don't have the countervailing antitrypsin in their blood, once the trypsin gets -- pardon the expression, revved up or gotten up to a large

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degree of production because of the irritation or inflammation in the tissue, the original assault is conquered or goes on at the low level but the destructive proteins stay there and continue to digest tissue. So these people, given the proper stimulus, if they don't have the anti-proteinases will go on and destroy their own tissues and often result in emphysema, often -- not often, occasionally result in emphysema.

One (1) of the major stimuli, of course, is smoking and if people have alpha 1 antitrypsin deficiency and smoke, they are the people, and they are one percent (1%) of emphysemas. They will develop emphysema often at an early age, and it's a rather typical kind of emphysema that affects mainly the lower lobes of the lung and can be so identified. So we say to our medical students, if you have a thirty-five (35) year old or a forty (40) year old female who develops emphysema of the lower lobes, the student's answer is alpha 1 antitrypsin deficiency. Very uncommon, we see a case a year.

THE COURT:

You -- you've mentioned that in your report.

Me CHERNIAK:

It is one (1) of the -- that deficiency is one (1) of the causes of lung disease that is unrelated to smoking?

A- Emphysema not been related -- not unrelated. It is a

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basic substrate or underlying condition which is usually, not always, I agree -- not always, but usually related to cigarette smoking. The cigarette smoking gives expression to the disease. It hurries the disease along.

THE COURT:

Is that the same deficiency that is mentioned in -- at page forty (40) of your report where you say alpha 1 P?

A- Yes.

Q- P-I?

A- I, yes.

Q- I, okay.

A- Yes, it is.

Me CHERNIAK:

Q- Now, I'd like you to turn to page one twenty-two (122) so I can read you the proposition there.

A- From Stockley?

Q- I'm sorry, one twenty-three (123), I beg your pardon.

A- Yes.

Q- And there is a heading on the left-hand column that says "Role of Cigarette Smoke", and the author says this:

> "All hypotheses concerning the pathogenesis of emphysema have to include the role of cigarette smoking."

I take it you would agree with that proposition? Is

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that a yes?

A- Yes, I'm sorry, yes.

Q- Okay, and then the author goes on -- and I'm not going to read these -- to list a number of ways in which this factor can be implicated, and he lists several -- several different ways including the one that you just referred to. Am I not -- am I correct?

A- Yes.

Q- All right, and then the author goes on to say:

"Recent work has demonstrated that lung..."

-- and you'll have to help me, that's alpha antitrypsin, is that what that means?

A- M'hm, alpha 1 antitrypsin, yes.

Q- "Alpha 1 antitrypsin from smokers is a less efficient inhibitor than the alpha 1 antitrypsin of non-smokers."

That's what you just told us, right.

A- Yes.

Q- "However, which of the many -- many potential mechanisms outlined above ..."

-- and that refers back to that list of things in the previous paragraph --

"... is responsible remains uncertain and indeed all may play a role. Nevertheless, these thoughts and observations, with the

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possible exception of the work by Hopkin, failed to explain the susceptibility of only a small proportion of cigarette smokers to the development of significant emphysema."

And I take it from our earlier discussion, you would agree with that proposition?

A- Right.

Q- You do?

A- Yes.

Q- Okay. Then if you would turn the page to one twenty-four (124), and we get -- if you look at the very last paragraph of the article, before the acknowledgements, on the left-hand column, the author says this -- and I want you to listen to this proposition and tell me whether you agree with it or not:

"Until the basic steps of the inflammatory process, and in particular the release and physiological control of potentially damaging enzymes are fully understood, together with the knowledge of structure and metabolism of lung substrates, the pathogenesis, prevention and treatment of destructive lung disease is likely to remain largely hypothetical."

A- Yes.

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Q- Now, is that a proposition that you can agree with?
A- It's an interesting proposition, an interesting proposition, and I certainly don't agree with it, of course. I think this is reasonable speculation. I think this is very reasonable speculation. As we said, we don't really know the steps by which, all the steps by which this inflammatory process in smokers takes place, or in people exposed to a lot of lung disease or recurrent infections. We can describe what happens. We describe an inflammatory process and there is no doubt about it that trypsin and the other proteinases, some of which are produced by, as he says, neutrophils, by other cells and so on, take part in the inflammatory process. It is a remarkably complex process, the inflammatory process, once started.

18/0067

Now, what he is speculating on is the role of these proteinases, the role of these proteins which digest foreign tissue. And I suppose if one is a teinologist, one puts purpose in the things, and the purpose would be to digest inflammatory cells which come in, they're bacterial cells, viruses, to set up an inflammatory process to carry it away into the blood stream because it gets red and there are lots of blood vessels.

So he is speculating here that in addition to these proteinases playing a role in emphysema, and they

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certainly do in the small subset of emphysemas which are caused by alpha 1 antitrypsin deficiency, they may well play a role in other inflammatory lung diseases, chronic bronchitis, asthma, I suppose, he can even think of but I think perhaps he's talking about -- I don't know, he hasn't said. He said: "other lung diseases.

So this is speculation. To my knowledge, none of this has been proved, the pathogenesis -- our knowledge of the pathogenesis remains incomplete.

Q- Well, the point that I'm making is not the speculation that he has about what the cause may be. The point that I'm asking about really is the proposition that because so much is unknown about this complicated process that you've taken some pains to tell us about, that he is right when he says that until more is known about what the mechanism really is, what this poorly understood process really is, the pathogenesis, prevention and treatment of lung disease is likely to remain largely hypothetical. Is that a proposition that you can subscribe to?

A- Not really, because that sort of thinking, although he states it in a very flat-footed, firm fashion, our knowledge of most diseases is incomplete and we can't prevent and thoroughly completely treat all diseases. I suppose what I must confess to you as a physician is

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that we do our best and we know that in this type of inflammatory disease of the lung, caused by cigarette smoking, started on its path by cigarette smoking, continued on its path by cigarette smoking, while there may be all sorts of steps in the development and continuation of the inflammatory process, the chemistry thereof that we don't understand, we know that, the fact is that we know that this is started by cigarette smoking and that it is exacerbated by ongoing cigarette smoking, but that doesn't tell us how to completely prevent the situation once it's started, nor how to treat it if it's ongoing. I mean, we can't treat it.

Q- What it tells you is that it's started in cigarette smoking in some people but not all cigarette smokers?

A- Yes.

Q- Right? And some non-cigarette smokers get the disease?

A- Very few.

Q- But some.

A- M'hm.

Q- Yes? All right.

A- And those cigarette smokers who don't get the disease, the clinical disease, indeed as we said before, if you take sections of their lung, even if they have been smoking for a year, you can show early changes. That's well-known. These may never progress on to clinical

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disease, but there are early changes in the tissues.

Me CHERNIAK:

Now, My Lord, where I come from, we have a procedure whereby one can mark something for identification, just so another Court can see what it is the witness was referring to. I'm not tendering it as an exhibit, I'm tendering it as something that the record will simply demonstrate to someone who's looking at this record and some historical or other context, that will know what it is the witness referred to. May I so tender it?

Me BAKER:

My Lord...

THE COURT:

I don't need to hear it.

Me CHERNIAK:

I'm sorry, My Lord?

THE COURT:

You can't file this as an exhibit. It makes absolutely no proof whatsoever.

Me CHERNIAK:

I'm not tendering it for proof, My Lord. I'm only tendering it so that ...

THE COURT:

Then, if it's not proof, it's irrelevant.

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Me CHERNIAK:

... someone looking at the record will know what it is.

THE COURT:

We've already put the propositions, you've given the names and that will be in the transcript. That's all there is need to be.

Me CHERNIAK:

Thank you, My Lord.

THE COURT:

The rest is purely hypothetical. That's not relevant.

Me CHERNIAK:

Q- Would you agree with this proposition, doctor? There are subjects who are especially susceptible to the effects of smoking?

A- Yes.

Q- And would you agree with this? There is great interest in identifying factors which cause a minority of smokers to develop clinically significant C.O.P.D.?

A- Yes.

Q- And would you agree that there are a number of factors that are considered to be possibilities as to why -- why that occurs, among them respiratory disorders in the childhood and in the recurrent respiratory infections?

A- Yes, yes.

Q- And would you agree that genetic factors may also play a

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role?

A- Yes.

Q- All right. Now, I want to ask you in a little more detail about some of these factors, can we call them risk factors, for lung disease, chronic obstructive pulmonary disease and/or chronic bronchitis? Just for convenience, let's call them risk factors. And I want to ask you about some of them. Is age a significant ...

Me BAKER:

Excuse me. Did he give an answer to your question?

A- Yes.

Me CHERNIAK:

It wasn't a question, it was a statement that I'm just going to call ...

Me BAKER:

I heard Mr. Cherniak say: "Can we call them risk factors". Did the witness answer the question?

Me CHERNIAK:

Is the witness going to disagree with that, My Lord? I mean, really!

A- I haven't heard them yet. I haven't heard them yet, so ...

Q- All right, let's -- I don't want to offend Mr. Baker but ...

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Me BAKER:

Perish the thought.

Me CHERNIAK:

Q- ... I'll call them risk factors, My Lord. The witness can call them whatever he wants.

Now, is age a major risk factor for chronic obstructive pulmonary disease?

A- It is more common in older people.

Q- If I suggested to you that once you get to about the -- once you get to forty-five (45) years of age, that one has -- there is four (4) times as large a proportion of this forced expiry volume, less than the sixty-eight percent (68%) as in the earlier age group?

A- I've not run into that particular proposition with that particular number, but I don't see anything terribly dangerous in admitting that there probably is a greater -- a greater proportion of people in older ages who have a reduced F.E.V. I.

Q- Even after adjustments for smoking, I mean, after all adjustments, including smoking, are taken into account?

A- Well, as you saw from the graph that we discussed before from Dr. Fletcher, as one gets older, the F.E.V. I drops, but for that age, it is reasonable. If you adjust for smoking and age, it shouldn't be in the -- the prevalence of a reduced F.E.V. I should not be any

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greater.

Q- Let me give you this proposition. Age in itself is a factor, is a risk factor for chronic bronchitis and there's a definite effect of age, even when you correct for cigarette consumption, even though the effect of age may be less than the effect of the smoking. Would you agree with that proposition?

A- Chronic -- we're on chronic bronchitis now, not chronic obstructive lung disease?

Q- For the moment we're talking chronic bronchitis.

A- Inasmuch as in my experience chronic bronchitis is a disease of smokers, I would have trouble in agreeing. I've already said that chronic bronchitis is a disease of smokers or those exposed to a lot of air pollutants, mainly second-hand smoke. And I have a little trouble accepting ...

Q- Well, let's see if I can remind you of something you said yourself, doctor. I want to show you an article that your name, or at least someone to -- as Mr. Baker will want me to be perfectly correct, My Lord -- someone who's got the same name as you.

Is the Neville M. Lefcoe there, would that be you, doctor?

A- That's me.

Q- I see. I like to anticipate Mr. Baker's objections, My

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Lord.

THE COURT:

Don't anticipate anything. Just proceed.

Me CHERNIAK:

Q- Now, is this an article, a publication, that you wrote in a publication called: "Archives of Environmental Health," in nineteen seventy-four (1974)?

A- Yes.

Q- Okay. And would you look at page one forty-five (145).

A- Yes.

Q- And I guess we'd have to look at the one forty-four (144), too, because the passage that I'm referring to on the right-hand column refers to Table III which we find on page one forty-four (144). And in the second paragraph, under the heading: "Results and Comment," you and your co-authors say this:

"Table III deals with the old problem of how much age in itself is a factor in chronic bronchitis, an issue that is not entirely clear in the literature. A correction for smoking rates, current and past, is usually not done in toto. In these pooled data, there is a definite effect of age corrected for cigarette consumption on the prevalence of bronchitis, although it is considerably less

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than the effect of smoking."

Did you write that?

A- Yes.

Q- And are you not saying there, doctor, if I understand the language correctly, that there is a definite effect of age on the incidence, if that's the right word, of chronic bronchitis, even after correcting for smoking?

A- Yes.

Q- Did you say that?

A- Yes, it's here.

Q- Does that refresh your memory ...

A- Yes.

Q- ... as to what your view is -- what your view was then on that proposition?

A- In seventy-four ('74), yes. In nineteen seventy-four (1974).

Q- And is your view now the same as it was in nineteen seventy-four (1974) on that issue?

A- I think it may have altered a bit, although the particular study which we did involved people who were involved in fairly air-polluted occupations. Nevertheless -- nevertheless, we were speculating then that perhaps in looking for evidence that there was more bronchitis, sputum production, than -- in older people than in younger people, was age a factor? And our data

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did show that there was a slight, there was a difference. The current material, particularly Fletcher's material, which I see, and other material, doesn't tend to support that. I did indicate that there is -- that bronchitis does occur in people who are exposed to more dust or more irritating material. But I wasn't seeing it in my office.

You reminded me that our large study did, in fact, show some of that.

THE COURT:

So, in my notes, what do I have? Do I have that age is a factor, minimal, maybe, but a factor or is not a factor?

A- Minimal. Minimal. You'll -- in the very front part in the abstract, which is in the dark print at the very last sentence, we did say, finally, looking at all the evidence we had together:

"Those who smoke pipes or cigars or both, never having smoked cigarettes, did not show an increased prevalence of bronchitis."

Me CHERNIAK:

Q- I don't know what that's got to do with age, but ...

A- Well, these people didn't ...

Q- Doctor...

A- In non-cigarette smokers, we didn't show an increased

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prevalence of bronchitis. And I'm trying to go back to the actual numbers.

Q- Well, you take all you want. I read you the particular paragraph I was interested in and, unless I understand the English language wrongly, which I suppose is possible, you said: "age, after correction for cigarette smoking, was a factor in incidence of chronic bronchitis."

A- I think I begin to see what the problem is, yes. We're in the hands of the statistician, Tom Wonnacott -- the other gentleman with whom I work is a statistician. When Tom did these figures, what he did was, looking at age, he corrected for cigarette smoking. And when you correct for cigarette smoking, you bring everything back to an average cigarette consumption. He did not look at non-smokers. That does not refer to non-smokers. That is corrected. So given the same amount of cigarette smoking is what that statement is saying, correcting for smoking rates, given the same amount of cigarette smoking in all of those groups, then -- which has not been done in the past -- then age becomes, that is in a smoker of a steady amount of cigarette smoking, the average amount in the group, that's how they correct for it, one shows an age effect.

Q- Well, doctor, I mean, that just doesn't make any sense

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to me. Then what does -- if that's what -- there's a definite effect of age corrected for cigarette consumption, if that's what that means, why would you add on: "although it is considerably less than the effect of smoking." When you're saying that there's an effective age, taking into account smoking, then how can it make any sense to go on and say: "although it's considerably less than the effect of smoking."

A- It makes sense in the statistical sense that a small amount in change in smoking makes a big deal of difference in bronchitis, whereas age -- as you get older, given a certain amount of smoking. You have to see here that correcting for smoking does not say: taking it down to the non-smokers. That's the problem, I think, with this particular reference. Well, that's how we did that.

Q- Doctor, you used an interesting word when you're talking about your own work there, you used the word: "speculation." Is this -- is what you did here a speculation?

A- No, this is data. This is data.

Q- Well, no, but ...

A- When you comment on it, you can speculate, but the data is here.

Q- No, no, no. Is what you -- when you wrote the paragraph

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that I quoted you on page one forty-five (145) ...

A- No.

Q- ... were you speculating? Were you giving your view of what your research that led to this article showed?

A- We were commenting on the data, yes.

Q- All right. So when you used the word: "speculating," you weren't speculating -- or were you?

A- Probably not -- no, I would say commenting on.

Q- Because that was your word, "speculating," not mine.

A- Yes, I know. Commenting on the data, sorry.

Q- Yes. So, are you telling us now that you didn't -- that reading that paragraph we shouldn't take it that age is -- is important, is an important factor on the prevalence of bronchitis, it makes no difference, not a factor? Is that what you're saying?

A- In non-smokers, actually, we didn't look at it here in non-smokers -- in non-smokers, my understanding of the literature is that age is not a factor.

THE COURT:

Because if you read from the paragraph that was read to you at page one forty-five (145).

> "Table III deals with the old problem of how much age, in itself, age in itself is a factor in chronic bronchitis. An issue that is not entirely clear in the literature. The

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correction for smoking rates current and past is usually not done in total."

That means in the current literature if I read well.

"In these pooled data, there is a definite effect of age corrected for cigarette consumption on prevalence of bronchitis."

What that article seems to say and again, that's my reading of it, that age, in itself, is a factor. Now, are you telling me now in your testimony today that this is not the case?

A- Age ...

Q- In itself is not a factor in chronic bronchitis?

A- Age is in the group of people here corrected for cigarette consumption, I think, is our problem. When a statistician like -- when a statistician corrects for cigarette consumption, all he does is bring every -- everyone in the survey to an average or mean cigarette consumption. I don't think we're saying here, we did not say, I know, we did not say looking only at the non-smokers, age seems to be a factor. We didn't do it that way. We looked at the bronchitic and the smokers and everybody and on average -- on average, age was a factor and that's -- that's probably not the question that Mr. Cherniak, Your Lordship, is asking, because this does not deal with non-smokers alone, it deals with

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the whole group.

Q- But in your Table III, you dealt with smokers and non-smokers, didn't you?

A- He took the whole group and corrected it.

Q- Yes, but Table III isn't a table where the people that are correlated in that are only smokers?

A- That's right, there are smokers and non-smokers.

Q- There are smokers and non-smokers?

A- That's right, and he corrected for smoking by averaging the smoking throughout everyone.

Q- Yes, but -- but some of those people didn't smoke.

A- Yes.

Q- And what you said there is that after correcting for smoking, age is a factor.

A- Yes.

Q- Now you're saying it's not a factor? What I want to know is...

A- No, I'm saying we didn't -- we didn't answer the question. We didn't answer the question of the effective age in non-smokers, that's what I'm saying.

Q- Okay, well doctor, I guess we'll have to -- we can all take our own view of what you -- what the English language seems to mean in that article. What's your position in nineteen ninety (1990), is age a factor or not?

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A- Well, I've done no more research on that particular -- we haven't redone the occupational groups nor looked at them, Your Lordship. The reason I gave that answer, of course, is twofold. The larger studies indicate to me, as I read them, that age is not a factor and secondly, in my practice, in my practice, I don't see chronic bronchitis in any age group unless they've been a smoker. That's my problem.

Q- So is -- so is your answer today, doctor, as far as you're concerned as an expert in your field, age is not a factor?

A- Yes.

Q- Okay. Now, are you familiar with a publication called "Chronic...

THE COURT:

Are you -- are you giving this a number?

Me CHERNIAK:

Oh, yes, I'm sorry, My Lord, I should have done that. I guess I was waiting for my friend's objection.

RJR-132.

Q- Now, doctor, are you familiar with a textbook called "Chronic Obstructive Pulmonary Disease", edited by Thomas L. Petty of the Webb Wading Lung Institute of the University of Colorado Health Sciences Center, in Denver, Colorado?

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A- I've heard of the textbook.

Q- And...

A- And I've heard of Dr. Petty.

Q- And is it a recognized textbook in your field?

A- We don't use it so I'm not entirely certain. Dr. Petty is certainly a recognized person. He is a controversial man but he is recognized, well recognized. He says and does things which are superb and he says and does things which are controversial.

Q- Well, okay ...

A- But by large, he is a ...

Q- At the moment...

A- Yes, I would have to accept him as a reputable person.

Q- Okay. It's the textbook for the moment. I know articles and journals can't be authoritative but textbooks, I think, can. Is that a textbook that is commonly used in your field? It may not be by you personally but is it ...

A- I'm sure some people refer to it. I don't use it, we don't recommend it at our medical school and I haven't read it.

Q- Now, have you -- do you know about some people in your field, known as Melvyn S. Tockman ...

A- No.

Q- Did you know Melvyn Tockman?

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A- No, not a familiar name.
Q- Or -- or a man named Khoury or a woman named Bernice Cohen from the school of hygiene. Let me refresh your memory, from the school of hygiene and public health, St. Johns Hopkins University in Baltimore, Maryland?
A- No, I don't know the names but -- I'm sorry, I don't know those names.
Q- Do you know about the Johns Hopkins University?
A- Indeed, I do.
Q- And is the Johns Hopkins University, is there a school of medicine, is that a recognized teaching ...
A- Certainly.
Q- ... teaching organization?
A- Certainly.
Q- Highly -- highly respected, well-known?
A- Certainly, yes.
Q- Now, I'm going to put a chapter of this textbook before you, doctor, and this -- what I have here is a chapter of the textbook "Chronic Obstructive Pulmonary Disease" that I'm -- that I mentioned to you. It's quite a long chapter and I'm only going to refer you to -- to certain parts of it. Would you look, first, at page -- page fifty (50)? And there is a heading, the major heading there on the top of the page is "Determinants of Risk" and then a sub-heading A, Demographic factors, and then

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the sub-sub-heading H -- and I want to read to you the first sentence of the section and the last sentence, and you might want to -- or one (1) of the middle sentences, and you might want to take time to read the whole thing, I don't know -- and this is what is said:

"Some effects of aging upon the lung are unclear. It is not certain, for example, what importance should be attributed to the small increase in the frequency of chronic bronchitis that is observed with age."

And then it goes on to give a -- a review of the literature. And then at the top of page fifty-one (51), the author suggests this:

"On the other hand ..."

-- and they refer to Table II in this chapter --

"... there is a definite association of increasing age with progressive obstruction decline in pulmonary function measured longitudinally on repeated examination although the explanation for this association remains obscure."

And then, in the -- in the -- then there's another lengthy review of the literature, and then the summary of this section by the learned author says this:

"In summary, a comparison of ventilatory

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function declines, stratified by age, gender and cigarette smoking suggests that age is a major risk factor for obstruction but not for chronic bronchitis."

Now, what do you say about that?

A- Well, we were talking of two (2) different issues here then -- by the way, I don't know when this was published? It doesn't say when here.

Q- I believe it's nineteen eighty-five (1985) but the title page doesn't seem to say so but I think it's nineteen eighty-five (1985). My information is nineteen eighty-five (1985).

A- Well, first of all, I don't think we have any argument here in this courtroom regarding the effects of age on obstructive disease. We looked at Charles Fletcher's graph. We saw that as the patient got older and older the bronchitic with obstruction, the C.O.P.D. patient, that the F.E.V. I, which is our best index, quantitative index of obstruction, the F.E.V. I dropped with age in the people who are already obstructed. No question of that.

If the patient stopped smoking, but already had established bronchitis, the obstruction continues to worsen.

Q- Well, let me just go on to one other part of this

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publication, on the question of age as compared to smoking.

And if you look at page sixty (60), you will see that there is a heading: "(b) Cigarette Smoking." Now, (a) was "Age", under these headings, and (b) is "Cigarette Smoking".

A- Yes.

Q- I'm sorry. (a) was "Demographic Factors", I guess, and (b) is "Cigarette Smoking". I'm going to come back to the other factors under "Demographic Factors".

And let's just read the first sentence so we know what it is that the author is talking about -- the authors are talking about.

"There is a well-established association of both amount of current cigarette smoking and lifetime consumption with the symptoms of chronic mucus hyper secretion."

And I guess we know what's that -- what does that mean in terms of what we've been talking about.

A- Chronic bronchitis, My Lord.

Q- Chronic bronchitis, all right. And then he goes on to say:

"Some chronic respiratory symptoms are present in more than 90% of persons smoking 40 cigarettes per day."

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And then he goes on to enlarge on that. We'll go down to the bottom of the page:

"Yet when followed prospectively, less than 20% of smokers developed significant airways obstruction."

And he quotes Fletcher.

A- Yes.

Q- And I think that's the proposition that you agreed with earlier.

A- Yes.

Q- "These investigators have described the rapid ventilatory deterioration in the minority of smokers who were impaired at the start of the 8 year observation period in terms of a horse race."

And then they go on to explain that and there is a detailed technical discussion of the literature and -- on following that, and then go down to the bottom of that page, page sixty-one (61), where the summary is referred to.

"In summary, cigarette smokers showed a markedly greater risk of chronic bronchitis than non-smokers."

And I think you've told us that.

"These data have suggested that cigarette

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smoking is ..."

And I'm not sure because it's blocked out -- "a" major risk factor or "the" major risk factor, but we can see the word "major risk factor,"

"... associated with mucus hyper secretion."

And it may be the major risk factor.

"In contrast, studies of ventilatory function have indicated that the effect of smoking on F.E.V. I decline is less than that of age, demonstrating that smoking is an important but not the major factor determining ventilatory function decline."

Is that a proposition with which you can agree, doctor?

A- Well, I hadn't seen it stated that way. I know that once obstruction is established, the passage of time, the obstruction gets worse. My area of agreement is limited to the sorts of observations which we see in Fletcher's graph, which many others have shown, that once the patient has a tendency to obstruct his airways, it goes on, smoking or no smoking, and gets worse. Smoking, ongoing smoking, is indeed a factor in making it worse. If one does such comparisons, I guess, these people are looking at, and wanted to say that age was more of a factor than smoking, I would not have any terrible objection to that. My response to that as a

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physician is: you can't do anything about age, but you can do something about smoking.

Q- The point is: age is a factor, doctor?

A- In obstruction.

Q- In obstruction, yes.

A- In obstruction. The other argument, how we got into this originally, I believe, Your Lordship, was to do with age on pulmonary function or age as a factor in chronic bronchitis.

Q- That was your work?

A- Yes. Well, he makes a statement here too, doesn't he?

Q- Well, but we were -- we've gone through what you said on chronic bronchitis. At any rate, the point is, age is a factor in airway obstruction.

A- Oh, yes. No question.

Q- All right. And is the viewpoint postulated that some people -- one of the reasons that some people react to various factors that impinge on airway obstruction or bronchitis is that they are hyper reactive?

A- May I ask does this refer to bronchial asthma? These are the people that we talk about as having hyper reactive airways. Close to definition of asthma, bronchial asthma, which is not caused by smoking.

Q- Well, I suggest to you that there's been, and I don't want to spend much time on this, there's been a lot of

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theories put forward by Fletcher and others about the causes of or the interaction between mucus hyper secretion, which is really chronic bronchitis, as I understand it, and airways obstruction. And there are various theories and is not the Dutch theory that there is a hyperactivity as a major risk factor?

A- Yes, there's no question that people who have irritated airways, an obstructive disease, have airways which are more reactive. That is, they go, they squeeze down and become more obstructed, acutely, over minutes, to an irritant or a constrictor. They respond more than normal airways. We have a test, a very nice test for that. We give them something which constricts airways and we give them a tiny dose, two (2) molecules of a litre, nothing happens. And we increase the dose quickly over a short period of time. We know what the tolerance of normal people is. At some point you can produce constriction enormously. People who are hyper reactive respond to small concentrations of this material, histamine methacholine. These are known constrictors of bronchial tubes.

Asthmatics are people who react rather severely. It is also known that other diseases have a little increased reactivity too. Chronic obstructive airways diseases.

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Q- And, doctor, that, of course, might be, if that theory is borne out, one of the reasons that a minority of people suffer a problem that other people don't. A minority of smokers do or a minority of non-smokers do.

A- Possibly. It's very difficult to tell these things, which is the chicken and which is the egg. Did the disease cause a hyper reactivity, which I happen to believe, or is the hyper reactivity, initial hyper reactivity a factor in the disease developing in some people. That is by no means certain.

Q- If it's the disease that is causing the hyper reactivity, it does not by any means cause it in all or even most people, does it?

A- Most -- no, no. Most bronchitics have a slight degree of hyper reactivity.

Q- No, no, but most smokers don't get chronic bronchitis?

A- Or don't get chronic obstructive airways disease.

Q- Or chronic obstructive airways disease or chronic bronchitis?

A- Yes. Most smokers get chronic bronchitis.

Q- I thought we established the contrary earlier to this.

A- We established that most smokers get chronic bronchitis.

Q- All right. Well, then, I guess the record will have to speak for ...

A- Oh, I certainly wouldn't have said otherwise.

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Q- All right.

A- Most smokers eventually get chronic ...

THE COURT:

You don't speak loud enough. I didn't under ...

A- I'm sorry. Most smokers get -- there's a statement in here, if you smoke over a pack a day, ninety percent (90%) of smokers get chronic bronchitis.

Me CHERNIAK:

Q- Have some -- have some changes, which is different than...

A- Mucus hyper secretion.

Q- ... than chronic bronchitis, as I understand it.

A- All right. Yes. All right.

Me BAKER:

What page are you pointing to?

Me CHERNIAK:

I thought we dealt earlier, and I thought you agreed earlier, because I asked you the proposition.

THE COURT:

He said that the majority of smokers continue to smoke without the deterioration and without developing chronic -- no. You said about chronic bronchitis, the majority of smokers continue to smoke without a deterioration of their condition. If they do not have an impaired lung condition.

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Me CHERNIAK:

I'm sure that's what he said, My Lord, because I read him that proposition.

A- Yes, that was correct. The majority of smokers do not get impaired lung function, i.e. obstructive airways. But the majority of smokers -- I'm sorry if I said something to the contrary. I don't think I would have. The majority of smokers get chronic bronchitis.

THE COURT:

Well, you also said that the majority of them didn't get it.

A- Didn't get chronic obstructive airways or chronic bronchitis?

Q- Chronic bronchitis. That's my note.

A- I'm sorry, sir.

Q- You didn't mean that, if you said that?

A- No, I did not mean that. I think any respiratory physician will tell you that the majority of people who smoke get chronic bronchitis.

Me CHERNIAK:

Q- Well, put it this way, the chronic bronchitis that a majority of smokers get involves little deterioration of lung function?

A- Oh, yes, chronic bronchitis does not say anything about deterioration of lung function, it's just mucus hyper

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secretion, cough and spit. It doesn't say anything, the lung function stays the same. As soon as lung function deteriorates, they then have chronic bronchitis and chronic obstructive lung disease.

Q- So what you're saying is the majority of smokers will get something that will cause them to cough, ultimately cause them, to some degree, to cough and spit, but otherwise will not interfere with their lung function or ability to carry on?

A- That's right. A minority will then develop C.O.P.

Q- A minority.

A- Only a minority.

Q- A minority ...

A- Yes, indeed.

Q- ... of those who get the coughing and spitting will then go on to get something that will interfere with their functions?

A- Yes.

Q- All right. I think that's -- I think that's what I did say to him, My Lord. All right. Now ...

THE COURT:

We'll take a ten (10) minute break.

Me CHERNIAK:

Thank you, My Lord.

SHORT RECESS

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THE COURT:

Before we start, do you know if you still have a long time to go?

Me CHERNIAK:

I beg your pardon, My Lord.

THE COURT:

Do you know how much time you still need to go?

Me CHERNIAK:

I doubt if I'll finish today, My Lord, but I'll finish reasonably early tomorrow morning.

THE COURT:

Because we may break at four (4H00). If you're not going to be finished anyways tonight.

Me CHERNIAK:

Oh, I was not planning on finishing tonight, My Lord. I think I've got just too much to go.

THE COURT:

Okay.

Me CHERNIAK:

Four o'clock (4H00) is fine with me.

Q- Dr. Lefcoe, there, among the various risk factors that are regularly identified for both obstruction and chronic bronchitis, am I correct that social economic status is always one of the ones that is listed?

A- As I understand it, socio-economic status is a risk

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factor for onsetting of smoking, and therefore secondary related to chronic bronchitis and lung disease.

Q- Well, do you not agree with the proposition that measured in terms of income, education and occupation, socio-economic status has often been implicated as a risk factor for airways obstruction in chronic bronchitis?

A- I wouldn't disagree with that.

Q- You wouldn't disagree with that?

A- I wouldn't disagree.

Q- Okay. And am I correct that genetics is a risk factor for chronic obstructive pulmonary disease?

A- I would like to, at this point, say that while agreeing with what you say, unfortunately, you're not putting any numbers on it. Now, I don't need exact numbers. I would like to agree with you, saying that socio-economic status, as an independent variable ...

Q- I thought we were through with that. Okay.

A- No, socio as an independent variable.

Q- We're going back to socio-economic ...

A- And genetics are risk factors, but very small ones. Very small ones, compared to the major risk factor.

Q- Okay. Well, first of all, go on, since we're back to the socio-economic status. I wonder whether you'd look at the textbook that you have in front of you, "Chronic

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Obstructive Pulmonary Disease," and look at page fifty-nine (59), and there is the heading there, "Socio-Economic Status," and it is under the same heading that we've referred to earlier that starts on page fifty (50), "Determinants of Risk, (a) Demographic Factors," and we had age and then the author goes on to gender, which I'm going to come to in a moment, and then race, which I'm going to come to in a moment, and on page fifty-nine (59), socio-economic status.

A- Yes.

Q- And we find there the passage that I -- the proposition that I just read to you a moment ago:

> "Measured in terms of income, education, socio -- income, education and occupation, socio-economic status has often been implicated as a risk factor for airways obstruction and for chronic bronchitis. Although chronic bronchitis and emphysema have been associated with poor socio-economic circumstances, cigarette smoking and occupation are thought to be more important than poor living conditions in determining this relationship."

A- Yes.

Q- Now, is that a proposition that you can agree with or

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not?

A- Yes, sure. Certainly. Certainly.

Q- All right. My Lord, we haven't actually put this document in.

Me BAKER:

My Lord, before my friend goes on to the next step, there are conclusions and other observations that follow the last line that he has just read to the witness, and it certainly wouldn't have been inappropriate for Mr. Cherniak, in fairness to the witness, to read the next line and then ask him the proposition, because it's more complete. He's given him a truncated part of the paragraph.

Me CHERNIAK:

Well, I must say I object very strongly to my friend standing up and in effect telling the witness to read something. Re-examination is the place to do that, if my friend wants to. This is cross-examination. He might as well have just stood up and said: Doctor, why don't you read the next -- I don't know what the next paragraph says, it doesn't matter. I read him a certain proposition, he agreed with it. I don't think it's up to my friend to, in effect, coach the witness in that way. I say that respectfully.

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THE COURT:

I suspect they will have to render another clarification. I'm going to write a book on evidence by experts, what is proof and what is not proof. This is not proof. Proof is made by the witness. Unless the use of a textbook is made, if the witness recognizes that as authoritative, that is as the Bible on the subject, if he does not even know of it, the only thing you could do with the paper, there are other things, but I mean for legal purposes, is to put propositions to the witness and verify whether or not he agrees with some proposition and that's the end of it. He either agrees or disagrees. Proof of the proposition so put to the witness will be either made by the witness himself, if he agrees, or by somebody else in another manner. And unless the document is put into evidence by some other legal means, it will have absolutely no probative and no content value. The fact that you're missing a sentence doesn't change a thing. The fact that you want to file this won't have any bearing on the judgment and I will not even read a line out of what has been read to the witness.

Me CHERNIAK:

Quite, My Lord.

THE COURT:

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Because he has not read this thing before and it is not evidence. The only evidence is that which the witness gives or which somebody else, as a witness, will give in the trial.

Me CHERNIAK:

My Lord, I agree with that. I agree with that -- of course, I have to agree with it whether I do or not, but the fact is, I do agree.

THE COURT:

Well, if you don't agree, you can go up. Upstairs, yes.

Me BAKER:

Yes, we're on the fifteenth (15th).

Me CHERNIAK:

The -- I accept that proposition, of course. And the witness did agree with the proposition I read to you. So that is now his evidence. So I haven't proved that I agree by means of this extract. What I have proved is by the witness' own mouth saying: I agree with that proposition.

THE COURT:

Yes, and he said also it was a small risk factor. He agrees, yes, but it's a small risk factor.

Me CHERNIAK:

Now ...

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THE COURT:

Now, what is socio-economic status is -- there are a lot of discussions that we could have about that. To me it doesn't mean anything.

Me CHERNIAK:

At any rate, I have been referring to this document, My Lord. May it go in as the next RJR exhibit.

Me BAKER:

My Lord, I accept fully the proposition that you put five (5) minutes ago, and for the exact reasons that you gave, this document has no place as an exhibit in this trial.

THE COURT:

And I agree, so objection sustained.

Me CHERNIAK:

Q- Doctor, have you heard of a textbook, of a reference work called "Textbook of pulmonary diseases", the third edition, edited by a doctor named Gerald L. Baum of the -- who's a professor of medicine at the Sackler School of Medicine of Tel Aviv University ...

A- Yes.

Q- ... and Emanuel Wolinsky, a professor of medicine and of pathology at Case Western Reserve University School of Medicine in Cleveland? Have you heard of that textbook?

A- I've certainly heard of the textbook.

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Q- And is that a textbook that is considered authoritative in the field of pulmonary disease?

A- Unfortunately, I cannot say that it is. The original textbook of Baum -- and it was one of the original or the early textbooks in the field, I don't know how many years ago. Fifteen (15) years ago? Twenty (20) years ago? It wasn't a very good text and we used to laugh at some of the statements regularly. They came out of the old literature, pre-war. And I'm not sure I want to say which war. The Boer war, perhaps. So we laughed about it.

It has gone through subsequent editions. I think it was mentioned the third edition. I haven't looked at it, nor have my colleagues, and I haven't seen it around. I know that it exists and it is printed and that some people buy it, so in all humility, I can't say how good it is, whether it's up-to-date. And in all honesty, some textbooks are excellent in some sections, in a fast moving field, and others, for some strange reasons, they are greatly out-of-date and the field is so big that most texts are written by a lot of different people, and they write different chapters, and some are not very good, and some of them were superb. So it's difficult for me to comment.

23/005225 Q- Would you know a man named -- know of or know a man

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named Dennis Niewoehnar?

A- I'm sorry, I do not.

Q- Let us move on. Now, before you went back to socio-economic status, I was dealing with genetics. Do you agree or disagree with the proposition that genetics plays a part in the incidence of both lung cancer and chronic pulmonary disease?

A- I will agree -- may I modify that statement? I would agree that genetics plays a small part in the incidence of the current effect of lung disease and particularly in its emphysema form. I'm not certain that I would not agree that it plays a role in lung cancer. I'm sure that there are occasional forms of lung cancer which have been shown to be genetically linked, but if that is true, we don't pay much attention to it in clinical medicine and I certainly am not familiar with any extensive literature on the subject of the genetics of lung cancer.

Q- I want to show to you an article in a publication known as "The Lancet". You've heard of The Lancet?

A- I certainly have.

Q- I'll show to you a publication in The Lancet in nineteen seventy-seven (1977), the title of which is "A Common Familial Component in Lung Cancer and Chronic Obstructive Pulmonary Disease" by Bernice Cohen and a

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number of others. Is that an article, first of all, with which you are ...

A- No, I haven't read this article.

Q- I'm sorry?

A- I have not read this article.

Q- You do not read The Lancet?

A- I used to get it, I used to subscribe to it. In recent years, I just read it through, current contents. I select the articles in which I'm interested.

Q- I see. Well, in nineteen seventy-seven (1977), did you get it?

A- No, I was not subscribing in seventy-seven ('77).

Q- Would you agree that a discussion of lung cancer and chronic obstructive pulmonary disease is right within your field ...

A- Absolutely.

Q- ... in the field that you are ...

A- Absolutely.

Q- ... you have said today that you're expert in?

A- Yes, absolutely.

Q- And would you agree that a publication in The Lancet on those -- on those very subjects is ...

A- Yes.

Q- ... something that is worth looking at in your field?

A- Yes.

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Q- Yes. Well, I want to read you something from that and you tell me whether you agree with it. And I'm going to read you from the summary of it. You don't have to look at it, I can just read it to you ...

A- All right.

Q- ... because you may not recognize it, so I want to read it to you carefully and you tell me whether you agree with the proposition or not.

Me BAKER:

May I see a copy of that article, Mr. Cherniak?

Me CHERNIAK:

Well, the witness isn't -- doesn't recognize it, My Lord. I can't see any point to putting it in. The witness never heard of it, apparently doesn't read The Lancet, never read this article, so I'm just going to refer him to the proposition. I don't see why my friend needs a copy.

THE COURT:

Then why did you give him the article?

Me CHERNIAK:

I'm sorry?

THE COURT:

Why did you give him the article?

Me CHERNIAK:

Well, I had to give him the article to see whether he

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recognized it, My Lord. He can give it back to me or he can keep it, as he wants.

Me BAKER:

My Lord, if I may, there's a -- I don't want to indulge in any ad hominem discussion, but it's inappropriate. Mr. Cherniak knows that he's been sitting in this trial now for three (3) or four (4) months off and on. He knows the rulings that Your Lordship has persistently and consistently made, that when he shows the witness a document, he shows it to counsel. Whether the witness has ever seen the article before is of no importance whatsoever. If he's going to put a question to him on a sentence of that, we are entitled to see it if he's got it here with him.

THE COURT:

If he's going to use it, yes.

Me CHERNIAK:

Well, My Lord, I'm not going to seek to enter it because my friend is going to object to it. I'm just not prepared to keep feeding these articles, which my friend then objects to, to him. Let him do his own research. If he wants to agree that it goes in, he gets a copy of it. If he doesn't want to agree that it goes in, I'm not going to do his research for him. He can do his own.

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Me BAKER:

It has nothing to do with me doing research, My Lord, and he knows it.

THE COURT:

We're losing time. Ask your question.

Me CHERNIAK:

Thank you.

Q- Here's the proposition that I want to put to you, doctor.

"First-degree relatives of lung cancer patients and of patients with chronic obstructive pulmonary disease had significantly higher age-sex-race-smoking-adjusted rates of impaired forced expiration than first-degree relatives of patients with non-pulmonary disease or community-derived comparison series (neighbourhood controls and teachers). Subclassification of the data and multiple adjustment for smoking, race, sex, and other confounding factors emphasised the consistency of the pattern. These findings strongly suggest that lung cancer and chronic obstructive pulmonary disease share a common familial component other than smoking."

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Now is that a proposition with which you agree, disagree or simply don't know?

A- Strongly suggest? How can I agree or disagree? They're suggesting it. I know of no further work along that line. There have been a lot of attempts to associate it. These are small groups of people. They showed clustering. You can show that by flukes, for other reasons in all sorts of situations. I don't know of any ongoing work in this field that has shown conclusively, and we are dealing with that sort of thing here, conclusively that there is clustering, genetic clustering, familial clustering. As a matter of fact, they make that reference here on page five two four (524):

> "Reports of pathogenetic interrelations between C.O.P.D. and lung cancer have been contradictory and confusing. Some workers reported a "strong association"..."

-- et cetera, et cetera, et cetera.

Some of their associations are positive but not statistically significant. So that means, if there is an association between close relatives and the incidence of cancer, it is, you know, not overwhelming by any means. So that I find it hard, without studying this and knowing what's gone into it, to comment. And I have

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to say, in the end, how important is this?

Q- All I'm suggesting to you, doctor, is that it is recognized in your field that one of the causes, one of the reasons that some people seem to contract chronic obstructive pulmonary disease and lung cancer while others don't, smoking, age, sex and other adjusted, is thought to be genetically based.

A- But I'm sure there are people who feel that that is a risk factor. In the end, it is a small one. The overwhelming factor that we know about and is solidly based ...

Q- But of course ...

A- ... is cigarette smoking. I leave you with that proposition.

Q- Of course, doctor, you've not done any research yourself on the proposition, have you?

A- Certainly not.

Q- But what we do know is that only a small proportion of smokers, even heavy smokers, get either lung cancer or get airways obstruction, or bronchitis for that matter, and there's something about smokers that makes them get it?

A- Yes.

Q- And what people are trying to do is identify what that something is, aren't they, or what those somethings are?

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A- I would have to say, from my knowledge of the pulmonary field, it's not an important field of research.

Q- I beg your pardon?

A- It's not an important field ...

Q- It's not an important field of research?

A- Certainly not. People who smoke, the more they smoke, the more chance they have of getting lung cancer, of getting C.O.P.D., and we know that some don't get it. Why they don't get it, we're not sure. We know there are probably all sorts of other risk factors around, many ones which influence that expression of the disease.

THE COURT:

Q- No, but if you have one (1) smoker out of ten (10) that gets cancer, lung cancer, and nine (9) out of ten (10) that don't get it, there's got to be a reason somehow.

A- Yes.

THE COURT:

It's basically the question that was asked by Mr. Cherniak. One (1) of the hypotheses is that there would be a genetic -- some kind of genetic factor that would trigger either the production of the illness or the defense of the organism against cancer or whatever. The proposition is that do you agree with -- that there may be a genetic factor either preventing or accelerating

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the development of cancer?

A- It is -- it's certainly entirely possible. I don't -- I certainly haven't had time to go over this paper in great detail. I can say from the teaching groups we have and the evidence we examined, we don't teach that. We say there may be and there must be many other factors agreed, and they are minor factors which influence whether there is an expression in a smoker of lung cancer. The most important factor is how much they smoke, how long they've smoked, whether or not they're a smoker, of course. The longer they smoke, the greater their chance of getting lung cancer or of getting C.O.P.D.

Again, though, they don't all get it in their lifetime and why some people get it early, as you say, and others don't, is not known. There are all sorts of hypotheses, other air pollutants that they breathe, their occupation, some poison, maybe even something they eat -- perhaps there is a genetic disposition. It's entirely possible. Perhaps their lung mechanics are such that they don't clear the irritants out of their lung as easy. There are dozens and dozens of possible explanations of which this is one.

Q- But the point is, doctor, that people are looking to find out what the true explanation or explanations is or

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are, are they not?

A- There are some people who are interested in that area of research.

Q- Would you look at that publication, The Chronic Obstructive Pulmonary Disease" again. It's not an exhibit but you have it. It's the -- it's the Tockman article.

A- Tockman is one of these too.

Q- Yes, I know. Look at page sixty-two (62). Now, I'm going to read you a proposition and ask you whether you agree with it or not. The heading is C, it's under the same general heading that we talked about, "Familial and Genetic Factors", and I want to read you the first sentence and ask you if you agree with it.

> "Genetic susceptibility long recognized in the etiology of chronic obstructive pulmonary disease ..."

-- then he gives the reference to Sir William Osler, in nineteen o five (1905) --

> "... has recently received increasing attention."

The references that he gives, Sir William Osler, in nineteen o five (1905) that is a -- a very well-known and respected Canadian physician, is it not?

A- Yes.

Q- Yes. So is it a true statement that a genetic

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susceptibility has been long recognized in the etiology of chronic obstructive pulmonary disease, is that true or not?

A- Well, I haven't recognized it as a major one, and as a minor one, yes.

Q- Please, doctor, I haven't asked you whether it's major or minor. Has it been recognized, that's the question, as long ago as Sir William Osler's research in Canada?

A- I'm hesitating because people have noted, have said there may well be a genetic factor and there appears to be some clustering, and one (1) of the things -- we thought we had solved the whole problem when the alpha 1 antitrypsin deficiency was recognized, but that's not the whole story either, we have found.

So I would have no objections then, if you wish for the moment, for -- to agree with the statement that the genetics do play a part.

Q- So is the answer to my question then, doctor, yes?

A- Yes.

Q- The next part of that statement is that genetics -- susceptibility is another part of the same sentence -- has received -- has recently received increasing attention. Is that true or not or do you know?

A- It's nineteen seventy-nine (1979).

Q- I'm sorry?

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A- That's eleven (11) years ago.

Q- Yes, and then would you look to the -- look to the next page, starting the second line on page sixty-three (63):

"In fact, alpha 1 antitrypsin appears to be only 1 facet in a complex array of factors contributing to the pathogenesis of airways obstruction."

Do you agree with that proposition?

A- Yes.

Q- "Accordingly, more investigators are now exploring a variety of genetic and other host factors that lead to a differential susceptibility to deterioration in lung function associated with smoking."

Do you agree with that proposition?

A- Nothing wrong with that.

Q- "In brief, C.O.P.D. has emerged as a prototype for the epidemiological study of chronic diseases resulting from multi-factorial causation with emphasis on the interaction of genetic and environmental factors in producing disease."

Do you agree with that proposition?

A- Sure, certainly.

Q- And, can we just -- would you turn to page sixty-nine

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(69) of the same work, and this is a paragraph from the heading which appears on page sixty-seven (67), and maybe I'll read it starting at the bottom of page sixty-seven (67), you have to go two (2) pages back, and the heading is "Familial Aggregation Shared Genes and Shared Environment." The passage I want to read and ask you a comment on is this:

> "Essentially, studies show that there is higher correlation in F.E.V. I among first-degree relatives, and that first-degree relatives of C.O.P.D. patients have 1.2 to 3.0 times (median 2.5), the prevalence of chronic bronchitis and chronic non-specific lung disease observed in controls or general population groups. Such familial aggregation does not conform, however, to any simple mandelian pattern. Although various modes of inheritance have been postulated as noted by a man named -- or a person named McKusick and others in 1963, there is evidence that familial aggregation in airways obstruction and chronic bronchitis may be the result of both shared genes and shared environment."

Are those propositions that you can agree with?

A- May be the result, yes.

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Q- Shared genes -- both shared genes and shared environment?

A- Yes, of course.

Q- Now, am I correct, doctor, that it has been noted that sex is a risk factor in both bronchitis and obstruction, males have greater right -- have greater rates of chronic bronchitis than females for all smoking categories? Is that -- is that a statement with which you can agree?

A- In view of the last discussion which I think I've agreed to but I feel is incomplete, may I add something from this quotation?

THE COURT:

Yes.

Me CHERNIAK:

Q- I'm sorry, are we back on the last subject now?

A- Yes, yes, the genetics. On down in the middle of page sixty-nine (69) -- and these people are obviously interested here in looking at other factors, looking for other factors. It's that type of publication. They say:

> "It is not clear, however, whether there is an inherited tendency for development of airways obstruction chronic bronchitis or both as most available ..."

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-- inherited --

"... as most available studies have examined each outcome alone or have not adjusted adequately for pertinent familiar exposures such as passive smoking and childhood respiratory illness."

So that's the state of the art, everybody is playing around with it and looking for statistical evidence. In my mind, it's not subtle.

THE COURT:

It's going to get in -- if we go on like this, we're going to get it in.

Me CHERNIAK:

Well, I know, but the witness has now referred to this as being authoritative, My Lord. I tender it again.

THE COURT:

Okay, we'll -- if you don't mind, we'll adjourn right now and resume tomorrow. We could, if you wish, start at a quarter to ten (9H45) if you prefer.

Me BAKER:

I have no preference, I ...

Me CHERNIAK:

No problem for me, My Lord.

THE COURT:

You would.

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Me BAKER:

You would like to start earlier?

Me CHERNIAK:

Certainly. Whenever.

THE COURT:

Okay. So we'll start at a quarter to ten (9H45) tomorrow.

A- Thank you.

ADJOURNMENT

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